DOCUMENT RESUME

ED 272 114 HE 019 561

AUTHOR Lenning, Oscar T.
TITLE Expanding Knowledge and Clarifying Understanding about the Outcomes Structure and Its Application: A Compilation of Papers.
INSTITUTION National Center for Higher Education Management Systems, Boulder, Colo.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE 78
NOTE 211p.; Portions contain small print. For related documents, see HE 019 556-557 and HE 019 560.
PUB TYPE Collected Works - General (020) -- Viewpoints (120) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS *Classification; College Administration; *College Attendance; College Planning; Decision Making; *Educational Needs; Educational Objectives; Educational Research; *Needs Assessment; *Outcomes of Education; *Postsecondary Education; Program Evaluation; Student Evaluation; Student Personnel Services
IDENTIFIERS *National Center for Higher Educ Management Systems

ABSTRACT

A conceptual framework for educational outcomes (the Outcomes Structure) developed at the National Center for Higher Education Management Systems (NCHEMS) is addressed in seven papers. The first five papers consider the Outcomes Structure and its general application; the remaining two papers concern the applications of the Outcomes Structure in student affairs administration. Paper titles and authors are as follows: "A Conceptual Framework for Educational Outcomes" (Oscar T. Lenning, Sidney S. Micek, Allan L. Service); "A Conceptual Framework for Identifying and Assessing Needs in Postsecondary Education (O. Lenning); "Using the Outcomes Structure to Test the Adequacy of Outcomes Lists: Tryout at a State University (Jean J. Endo, O. Lenning); "Preliminary Tryout of the NCHEMS Outcomes Structure at Two Sets of Four Colleges" (O. Lenning, Edward G. Lundin); "Assessing Student Educational Progress" (O. Lenning); "Needs Assessment in Student Affairs" (O. Lenning, Andrea C. McAleenan); and "Assessment and Evaluation Related to Student Services" (O. Lenning). (SW)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

21
1978

ED272114

# Research and Curriculum Development in Mathematics Education

## A Collection of Papers

Grace T. Kennedy

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

M CHEMS

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

# Expanding Knowledge and Clarifying Understanding about the Outcomes Structure and Its Application: A Compilation of Papers

Oscar T. Lenning

1978

TABLE OF CONTENTS

PART I - EXPANDING KNOWLEDGE AND CLARIFYING UNDERSTANDING ABOUT THE OUTCOMES STRUCTURE AND ITS GENERAL APPLICATION..... 3

A Conceptual Framework for Educational Outcomes (Oscar T. Lenning, Sidney S. Micek, and Allan L. Service)..... 4

A Conceptual Framework for Identifying and Assessing Needs in Postsecondary Education (Oscar T. Lenning)..... 25

Using the Outcomes Structure to Test the Adequacy of Outcomes Lists: Tryout at a State University (Jean J. Endo and Oscar T. Lenning)..... 47

Preliminary Tryout of the NCHEMS Outcomes Structure at Two Sets of Four Colleges (Oscar T. Lenning and Edward G. Lundin)..... 68

Assessing Student Educational Progress (Oscar T. Lenning)..... 101

PART II - APPLYING THE OUTCOMES STRUCTURE IN A SPECIFIC ADMINISTRATIVE AREA: THE CASE OF STUDENT AFFAIRS ADMINISTRATORS..... 118

Needs Assessment in Student Affairs (Oscar T. Lenning and Andrea C. McAleenan)..... 119

Assessment and Evaluation Related to Student Services (Oscar T. Lenning)..... 152

# PART I

## EXPANDING KNOWLEDGE AND CLARIFYING UNDERSTANDING ABOUT THE OUTCOMES STRUCTURE AND ITS GENERAL APPLICATION

# A CONCEPTUAL FRAMEWORK FOR EDUCATIONAL OUTCOMES[a]

Oscar T. Lenning
Sidney S. Micek

National Center for Higher Education Management Systems

Boulder, Colorado

Allan L. Service

School of Social Welfare

University of Wisconsin - Milwaukee

Milwaukee, Wisconsin

[a]Paper presented at the 1978 Annual Meeting of the American Educational Research Association; Toronto, Ontario, Canada; March 1978.

# A CONCEPTUAL FRAMEWORK FOR EDUCATIONAL OUTCOMES

## Introduction

Let us examine a hypothetical scenario. James Green received a degree in business administration from Alpha College in the mid 1960s. He had spent five years at the college--three as a full-time student and two more as a part-time evening student. During that time, Jim was exposed to a variety of opportunities and experiences that not only increased his knowledge and skills, but also affected his values, relationships with peers, and other personal characteristics. He was sophomore class representative to the student senate, and later served as the president of the college's business students club. Jim was the first in his family to receive a college degree, and that achievement had an impact on his parents' social status. It also strengthened the determination of his younger sister and brother to attend college, which they eventually did.

Shortly after graduating from Alpha, Jim joined a firm headed by a classmate's father. He enjoyed good pay, status, security, and excellent opportunities for advancement. The company benefited from Jim's college-enhanced abilities, and his ideas led to significant operating economies. One year after graduation, Jim married Barbara Smith, whom he had met while attending Alpha College. Barbara also graduated from Alpha and after some graduate training, successfully pursued a career in nursing. At the same time, with encouragement from his company through released time, Jim was completing the masters degree program in management science that Alpha offered. They both appreciated the security that their professional status permitted. Later, as parents of two children, they came to the realization

that their college experiences were affecting the way that they related to their children--for example, they made greater attempts than would otherwise have been the case to instill openness to new ideas, a respect for others no matter who they might be, and a desire to seek out new situations and be adaptable.

Jim participated in civic and community affairs, partially because of an interest stimulated by a government course he had taken as an undergraduate at Alpha College. He served on the local school board, the city council, and the board of a local bank. He was also active in several professional associations, made numerous state and national presentations, and eventually became a national officer of one group. Jim continued to support Alpha College financially through its alumni fund and served as an alumni contact for prospective students interested in Alpha's business programs. In addition, because of the civic and professional contacts he made, he served as a consultant to the U.S. Commerce Department and several foreign governments, relating to the development of efficient management information systems.

It is obviously difficult to separate the effects of his Alpha College experiences from other factors impinging on the life of James Green. Furthermore, Alpha College not only affected him directly but also, through him, apparently impacted many others, including his parents, his brother and sister, his fellow students, his wife and children, his company, his city and various community and civic organizations, Alpha College itself, his professional associates, his state, his country, and even foreign countries. In addition to impacts through students like Jim, Alpha College also was <u>directly</u> affecting groups, communities, and individuals who were not students, through research conducted by the faculty, an extension advisory service, a day-care program set up for working mothers, weekend gymnasium privileges for community youth, a concert series for the community, goods and services purchases from

local businesses, and similar activities.

Educational-outcome scenarios of this kind could be developed for any college or university, and for elementary and secondary education as well. This example was generated using a conceptual framework for educational outcomes developed in recent years at the National Center for Higher Education Management Systems (NCHEMS). Work on this framework took into account the fact that although most people have an intuitive idea of what an educational outcome is, widely different concepts of outcome appear in the literature and elsewhere. Outcomes have been equated by some to such conceptually different terms as efficiency, productivity, effectiveness, benefits, output level, value added, impacts, and performance. There did not appear to be a generic conceptual framework that defined educational outcome in a generally accepted and operationally useful manner. Therefore, NCHEMS staff began in 1974 to synthesize the extensive literature pertaining to the issue (Lenning 1977b) and to develop a framework that would have general acceptance throughtout postsecondary education. This conceptual framework became the basis for the NCHEMS Outcomes Structure, a three-dimensional system for organizing outcomes information for purposes of classification, analysis, and decisionmaking (Lenning, Lee, Micek, and Service 1977; Lenning 1977a).

The remainder of this paper explicates the conceptual framework for educational outcomes developed at NCHEMS. Although it was specifically developed with postsecondary education in mind, the framework may also be relevant to educational outcomes at other levels. The basic elements of any educational outcome are discussed first. This is followed by a presentation of other factors important for an in-depth understanding of particular educational outcomes.

The Concept of Educational Outcomes

The approach taken with respect to defining a general and operationally useful concept of educational outcomes was to identify the basic attributes and characteristics of any such outcomes. Six such elements were identified as critical to defining and differentiating among educational outcomes, and each has been given a descriptive name as shown below:

1. Output/Impact - the degree of directness which characterizes the relation between educational process and educational outcome.
2. Form - the mode or fashion in which the outcome is observed.
3. Measurability - the degree to which the outcome can be quantitatively described.
4. Change Status - the degree of modification of the status quo associated with the outcome.
5. Focus - the basic entity that is affected by the outcome.
6. Neutrality - the value-free character of educational outcomes.

These elements are elaborated upon below.

1. Output/Impact. A major problem is that educational outputs have generally not been clearly distinguished from educational impacts. Failure to make a clear conceptual distinction between outputs and impacts reduces our ability to identify, organize, and analyze the wide range of educational outcomes. Both concepts are very important and each is a type of outcome. However, as policy analysts have found in other types of institutions and organizations (for example, Easton 1965; Robinson and Majak 1967; Cook and Scioli 1972; and Dye 1975), it is essential that outputs and impacts be distinguished from one another.

Educational outputs are the direct end products, events, or conditions that result from facilitation and production processes within educational institutions. Examples of outputs at the college level are achievement levels, knowledge, degrees, program completers, publications, cultural or entertainment events sponsored or provided, and scientific or artistic advances. Educational impacts, on the other hand, are the indirect products, events, or conditions that result from educational outputs and earlier educational impacts. Examples of college impacts are greater individual incomes resulting from college degrees, higher standards of living resulting from the increased income, and a larger gross national product resulting from higher standards of living. The primary distinction between outputs and impacts is whether or not the outcome can be directly linked, at least in concept, to basic institutional and programmatic activities. Outputs may be referred to as first-order consequences, signifying a direct link to institutional or program activities. Similarly, impacts may be considered second-order consequences, because the links to institutional or programmatic activities are indirect, either through an output (or more than one output) or through the output(s) plus a chain (or chains) of earlier impacts that resulted from the output(s).

Conceptually, the distinction between outputs and impacts is quite straightforward. In practice, however, things become rather complex and difficult. First, it is often impossible to ascertain cause-and-effect relationships between educational resources, activities, and outcomes, even though many such relationships have been hypothesized and some have been demonstrated. Second, from one perspective an outcome may be viewed as an output of an activity, and from another perspective it could be viewed as an impact of the same activity--for example, the development of student leaders might be seen as an output of the institution and as an impact of different programs within the institution. Third, any presumed output can be divided into component

that must occur before the overall output can occur. This introduces complexity into the determination of whether a particular outcome is an output or an impact. Referring to the example above relating to the development of student leaders, the component skills and abilities that make up leadership ability--ability to organize, empathize, speak fluently, motivate people, etc.--are outputs, and they lead to the overall ability to lead. They must be integrated within a person, however, before the overall ability to lead is present.

A related problem is that some entities conceived of as outputs and impacts are seen as inputs by others. Thus, some would consider a curricular program to be an output, while others would consider it to be a producing/facilitating activity that leads to outputs like student skills and knowledge. The same is true of the development and build-up of library and other instructional resources, including those being developed by faculty. For the resource developers on a campus, this development could logically be considered an output. The instructor using those resources could, on the other hand, view them as strictly inputs to the instructional process, and not as outputs.

It should be recognized that an impact is not only less direct than an output, but often is less immediately realized. An output occurs during or at the end of the process bringing it about, while an impact can occur during or at any time after the process ends. Therefore, educational institutions generally have much less control (if any) over impacts than they have over associated outputs of the institution. Although significantly positive correlations between amount of college education and income earned have been noted in the research literature, income is probably affected more by prevailing economic conditions and other postgraduate factors than by the college attended. Few college officials would claim that their institution has direct, immediate control over such an outcome.

In summary, outcomes are either outputs or impacts, and a particular outcome may be considered either when viewed from different perspectives. Some outcomes are definitely impacts, however, no matter who within the institution is viewing them; and it is important for planning purposes to consider them as such. Furthermore, thinking in terms of both outputs and impacts can help one to generate more comprehensive lists of particular kinds of educational outcomes, once the perspective from which one is viewing outcomes is clarified. To reach consensus on which outcomes should be considered outputs and which are impacts, it is essential that the unit of analysis be made clear (the outcome-production level on which attention is to be fixed, e.g., course, program, institution, system of institutions).

2. Form. The work of Schalock and his associates (1972) makes it clear that both outputs and impacts can take any one of three forms: product is a concrete entity that endures with time, such as a program completer, a degree, a job, a book, or an invention. An event is an observable, tangible transaction or set of behaviors that does not endure with time, such as a public seminar, a concert, or a graduation exercise. A condition is an intangible circumstance or set of circumstances, such as morale, satisfaction, an attitude or belief, an appreciation, social equity, or achievement. As with the output-impact distinction, thinking about kinds of outcomes in terms of products, events, and conditions can be useful for generating lists of specific outcomes, for developing measures or indicators of those outcomes, and for analyzing outcomes information.

3. Measurability. The ease with which particular outcomes of an educational institution or program can be quantified or measured is related to the tangibility or concreteness of its form. However, measurability is not synonymous with tangibility or concreteness. For example, abstract and intangible constructs that are often considered to be outcomes of a college education--analytical ability, reading comprehension, vocational readinesss, and various aptitudes--can be measured in quantifiable terms.

Determining whether specific outcomes and types of outcomes are easy or difficult to measure, and assessing the validity and reliability of their measures, can contribute to a better understanding of those outcomes and to any analyses that are done of them. Gross (1973), for example, has broken outcome goals for five target populations (society, individuals, employer, government, and institutions) into those that are easy to measure and those that are difficult to measure. One problem here is that what is easy to measure in the view of one person, based on the availability of a particular measure, may be considered difficult to measure by another person who considers that measure to be invalid. In addition, as technological advances in the measurement field occur, some outcomes currently considered difficult to measure may become easier to measure.

4. Change Status. Another important characteristic of educational outcomes is whether they are concerned with maintenance or change. Maintenance involves stabilization, reproduction, preservation, or other status quo outcomes. Examples include the continuation of traditions into the next generation, preservation of cultural values, restoration of community artifacts and paintings through guidance from university art students, skill maintenance provided by in-service

education, or maintenance of the educational level of a family. Conversely, change involves modification, revision, replacement or other alteration of the status quo. Examples include achievement of a college degree, greater economic and social mobility, increased knowledge and skill level, new art forms developed by college graduates, technological innovations, or medical discoveries. Derivation of these categories is based on the work of Derr (1973) and Parsons (1951). All educational outcomes can be thought about in these terms. Educational goals are designed either to preserve, replenish, reproduce, and stabilize the status quo or to modify, enrich, restructure, revise, or replace what is current.

5. Focus. Still another important characteristic of an educational outcome concerns the specific "what" on which the maintenance or change is focusing. For example, knowing that the outcome involves a change in knowledge and understanding, values, skills, habits, standards, economic conditions, or the gross national product is more useful than simply knowing that the outcome involves a change in status. Figure 1 presents the large array of focus categories and subcategories included as part of the "type-of-outcome" dimension of the NCHEMS Outcomes Structure. These categories are based on work by a large number of researchers and theorists, as outlined in Lenning, Lee, Micek, and Service (1977, p. 27).

6. Neutrality. Generically, outcome is a value-neutral concept, and thus educational outcomes should be thought of as being inherently neutral in character. Often, outcomes are equated with benefits and outcomes perceived to be negative in nature are ignored. But these value connotations are attached by the perceiver; they are not inherently part of or a characteristic of the outcomes. For planning purposes,

Figure 1

FOCUS CATEGORIES AND SUBCATEGORIES IN THE TYPE-OF-OUTCOME DIMENSION OF THE NCHEMS OUTCOMES STRUCTURE[a]

| Category Code Number | Entity Being Maintained or Changed |
|---|---|
| 1000 | *ECONOMIC OUTCOMES* |
| 1100 | Economic Access and Independence Outcomes |
| 1110 | Economic Access |
| 1120 | Economic Flexibility, Adaptability, and Security |
| 1130 | Income and Standard of Living |
| 1200 | Economic Resources and Costs |
| 1210 | Economic Costs and Efficiency |
| 1220 | Economic Resources (including employees) |
| 1300 | Economic Production |
| 1310 | Economic Productivity and Production |
| 1320 | Economic Services Provided |
| 1400 | Other Economic Outcomes |
| 2000 | *HUMAN CHARACTERISTIC OUTCOMES* |
| 2100 | Aspirations |
| 2110 | Desires, Aims, and Goals |
| 2120 | Dislikes, Likes, and Interests |
| 2130 | Motivation or Drive Level |
| 2140 | Other Aspirational Outcomes |
| 2200 | Competence and Skills |
| 2210 | Academic Skills |
| 2220 | Citizenship and Family Membership Skills |
| 2230 | Creativity Skills |
| 2240 | Expression and Communication Skills |
| 2250 | Intellectual Skills |
| 2260 | Interpersonal, Leadership, and Organizational Skills |
| 2270 | Occupational and Employability Skills |
| 2280 | Physical and Motor Skills |
| 2290 | Other Skill Outcomes |
| 2300 | Morale, Satisfaction, and Affective Characteristics |
| 2310 | Attitudes and Values |
| 2320 | Beliefs, Commitments, and Philosophy of Life |
| 2330 | Feelings and Emotions |
| 2340 | Mores, Customs, and Standards of Conduct |
| 2350 | Other Affective Outcomes |
| 2400 | Perceptual Characteristics |
| 2410 | Perceptual Awareness and Sensitivity |
| 2420 | Perception of Self |
| 2430 | Perception of Others |
| 2440 | Perception of Things |
| 2450 | Other Perceptual Outcomes |
| 2500 | Personality and Personal Coping Characteristics |
| 2510 | Adventurousness and Initiative |
| 2520 | Autonomy and Independence |
| 2530 | Dependability and Responsibility |
| 2540 | Dogmatic/Open-Minded, Authoritarian/Democratic |
| 2550 | Flexibility and Adaptability |
| 2560 | Habits |
| 2570 | Psychological Functioning |
| 2580 | Tolerance and Persistence |
| 2590 | Other Personality and Personal Coping Outcomes |
| 2600 | Physical and Physiological Characteristics |
| 2610 | Physical Fitness and Traits |
| 2620 | Physiological Health |
| 2630 | Other Physical or Physiological Outcomes |
| 2700 | Status, Recognition, and Certification |
| 2710 | Completion or Achievement Award |
| 2720 | Credit Recognition |
| 2730 | Image, Reputation, or Status |
| 2740 | Licensing and Certification |
| 2750 | Obtaining a Job or Admission to a Follow-up Program |
| 2760 | Power and/or Authority |
| 2770 | Job, School, or Life Success |
| 2780 | Other Status, Recognition, and Certification Outcomes |
| 2800 | Social Activities and Roles |
| 2810 | Adjustment to Retirement |
| 2820 | Affiliations |
| 2830 | Avocational and Social Activities and Roles |
| 2840 | Career and Vocational Activities and Roles |
| 2850 | Citizenship Activities and Roles |
| 2860 | Family Activities and Roles |
| 2870 | Friendships and Relationships |
| 2880 | Other Activity and Role Outcomes |
| 2900 | Other Human Characteristic Outcomes |
| 3000 | *KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOMES* |
| 3100 | General Knowledge and Understanding |
| 3110 | Knowledge and Understanding of General Facts and Terminology |
| 3120 | Knowledge and Understanding of General Processes |
| 3130 | Knowledge and Understanding of General Theory |
| 3140 | Other General Knowledge and Understanding |
| 3200 | Specialized Knowledge and Understanding |
| 3210 | Knowledge and Understanding of Specialized Facts and Terminology |
| 3220 | Knowledge and Understanding of Specialized Processes |
| 3230 | Knowledge and Understanding of Specialized Theory |
| 3240 | Other Specialized Knowledge and Understanding |
| 3300 | Research and Scholarship |
| 3310 | Research and Scholarship Knowledge and Understanding |
| 3320 | Research and Scholarship Products |
| 3400 | Art Forms and Works |
| 3410 | Architecture |
| 3420 | Dance |
| 3430 | Debate and Oratory |
| 3440 | Drama |
| 3450 | Literature and Writing |
| 3460 | Music |
| 3470 | Painting, Drawing, and Photography |
| 3480 | Sculpture |
| 3490 | Other Fine Arts |
| 3500 | Other Knowledge, Technology, and Art Form Outcomes |
| 4000 | *RESOURCE AND SERVICE PROVISION OUTCOMES* |
| 4100 | Provision of Facilities and Events |
| 4110 | Provision of Facilities |
| 4120 | Provision or Sponsorship of Events |
| 4200 | Provision of Direct Services |
| 4210 | Teaching |
| 4220 | Advisory and Analytic Assistance |
| 4230 | Treatment, Care, and Referral Services |
| 4240 | Provision of Other Services |
| 4300 | Other Resource and Service Provision Outcomes |
| 5000 | *OTHER MAINTENANCE AND CHANGE OUTCOMES* |
| 5100 | Aesthetic-Cultural Activities, Traditions, and Conditions |
| 5200 | Organizational Format, Activity, and Operation |
| 5300 | Other Maintenance and Change |

[a]Reprinted from Lenning, Lee, Micek, and Service (1977, p. 27).

in particular, the full range of outcomes and associated values should be considered.

It should also be noted that individuals may differ in their perception of the value of a particular outcome. Even for an outcome generally viewed as positive in our society, there may be people who see it as negative. The stated outcome goals in our society for schools and colleges are generally perceived by most people to be of positive value. However, Bowen (1974, pp. 14-15), has identified a number of general outcomes of college that many people consider to have negative value, for example, more liberal political, religious and social attitudes and values.

These six basic elements together delineate our concept of educational outcomes in an operationally useful form. Theoretically, outcome can be characterized as an output or an impact; takes a certain form; is measurable to some greater or lesser extent; is concerned with change or maintenance; has a particular focus or subject; and is inherently neutral in value. Any of the rich array of outcomes associated with our ficticious James Green, for example , could be categorized in terms of these six major characteristics. Attempting such a categorization, however, makes it clar that a number of factors not inherently part of educational outcomes nevertheless have important relationships with and effects upon those outcomes. These factors are reviewed in the next section.

## Factors Related to Educational Outcomes

Identifying the most important outside factors associated with educational outcomes can be seen as a process of answering a series of straightforward questions:

What activities, processes, or programs were implemented to bring about the outcome of concern?

Who receives or is affected by the outcome?

Why was the outcome generation process initiated?

Where did the outcome occur?

When did the outcome occur?

The factors corresponding to these questions are identified in this framework as:

1. Producer/facilitator
2. Audience
3. Intention
4. Functional area
5. Time

1. Producer/Facilitator. Even unintended college outcomes are typically stimulated by some causative or facilitative entities or factors within the institution. Knowledge about the entities influencing or causing an outcome is critical in any attempt to identify, classify, or analyze outcomes, since different types and levels of programs and organizational units are designed to produce particular kinds of outputs and impacts. For example, many of the outcomes intended for an introductory biology course may be different from those intended for an advanced biology course, for a degree-oriented program in the biological sciences, for a biology department, or for the institution as a whole.

Furthermore, what is viewed as an outcome from one viewpoint may be seen as an input from another perspective. For example, "graduates produced in college" constitute an outcome in the eyes of college officials, while business firms may regard these graduates as inputs. Thus it is necessary to link outcomes to the unit or entity that produces them in order to maintain a consistent perspective. Within higher

education, the programmatic activities of the college and its components have traditionally been divided into instruction, research, and public service. A commonly used expansion of this breakdown is the NCHEMS Program Classification Structure (Collier 1978), which includes a range of support programs and is considered applicable to all types of postsecondary-education institutions.

Neither the educational process within an educational institution nor the associated outcomes is totally separable into a set of component parts. As a result, it is difficult to determine which units within the institution contribute to the formation of a particular outcome. In addition, multiple programs or other organizational units within the institutiton often contribute to the same outcome, and their relative contributions cannot be easily ascertained. Institutional and program environments (other students, atmosphere, reputation, and so forth) also affect the outcomes produced. Similarly, a wide variety of methods, techniques, and tools can interact to constitute the process within the program or other unit. Each possible combination might be expected to result in a different educational outcome. Finally, the characteristics of the students and other inputs makes a difference in the outcomes attained. In short, a variety of complexities is associated with isolating the role of a specific educational producer/facilitator. Nevertheless, the more that is known about such entities, the greater the potential for understanding the resultant educational outcomes.

2. Audience. A second factor that affects educational outcomes is the identity of the persons, groups, organizations, or other entities that receive or are affected by the educational outcomes of concern. An educational institution has the potential to influence a large

number of persons, groups, and communities--plus other entities, such as the environment. On the surface, this dimension may seem straightforward, but actually it represents a major difficulty in identifying and understanding educational outcomes. This difficulty results from the great complexity characterizing the individuals, groups, and communities directly served or affected by the outcomes of education. For example, Gross (1966) identified 26 major groups interested in the outcomes of any social system, such as education. Figure 2 presents audience categories and subcategories that constitute the audience dimension of the NCHEMS Outcomes Structure.

3. Intention. Specific outcomes may or may not be intended by the producing and facilitating units within the institution that give rise to them. In particular, many of the negatively viewed educational outcomes (for example, increased student drug use) are not expected by those planning the educational activity that causes or facilitates them. These unintended outcomes, or side effects, may occur either instead of or along with intended outcomes. Sometimes, previous experience or research may suggest that negative side effects will occur. One must then consider whether the benefits of the intended outcomes outweigh the expected negative side effects by enough to warrant proceeding with the activity or program. However, it should not be inferred from this, or from the fact that intended outcomes are almost always viewed as being desirable, that unintended outcomes are always undesirable, or negative. Some of the most important and valued outcomes of specific programs and activities can be unintended side effects, for example, a program designed specifically for information dissemination that stimulates the formation of an organized student action group.

## Figure 2

## CATEGORIES AND SUBCATEGORIES OF THE AUDIENCE DIMENSION OF THE NCHEMS OUTCOMES STRUCTURE[a]

10. *Individual/Group Clients*—This category refers to persons or groups of persons who are direct clients of the postsecondary education unit of concern and/or their immediate associates, such as family and relatives or peers.

    11. *Students*—Individuals or groups of individuals who currently are enrolled in the program, institution, or system of postsecondary education.

    12. *Former Students*—Individuals or groups of individuals who formerly were enrolled in the program, institution, or system of postsecondary education.

    13. *Family and Relatives of Students or Former Students*

    14. *Peers and Associates of Students or Former Students*

    15. *Faculty*

    16. *Staff Other than Faculty*

    17. *Other Individual/Group Clients*—An example would be an individual who is none of the above but is served by an advisory service offered by the college.

20. *Interest-Based Communities*—This category refers to large groups that are identified as entities working toward a *well-defined interest or mission*.

    21. *Private Enterprise Communities*—Communities where a major purpose is financial remuneration and profit—for example, corporations, small businesses, and farmers

    22. *Association Communities*—Communities where members belong on the basis of affiliation rather than employment, such as unions and professional societies.

    23. *Government Communities*—Communities designed to administer government regulations and services, such as city hall, state department of education, and legislative communities

    24. *Nongovernmental/Public Service Communities Other than the Institution Producing the Outcome*—Nonprofit service organizations, such as schools, hospitals, welfare agencies, philanthropic foundations, colleges (other than the college producing the outcome), and research organizations.

    25. *Institution or Institutional Unit Producing the Outcome*—The postsecondary education institution and/or units within that institution that are perceived as the producer/facilitator of the outcome(s) of concern.

    26. *Other Interest-Based Communities*—An example would be an ad hoc coalition task force of representatives from two or more of the above areas.

30. *Geographic-Based Communities*—This category refers to large groups defined on the basis of *functional territorial boundaries*.

    31. *Local Community*—A township, city, county, metropolitan area or other type of locality having particular boundaries. It is not necessarily restricted to the legal or jurisdictional boundary, but the functional one in which the impact of the institution is (or should be) directly and physically felt. The boundaries will vary with the institution/program and outcome of concern

    32. *The State*

    33. *A Region*—An aggregation of states or parts of states.

    34. *The Nation*

    35. *An International Community*

    36. *Other Geographic-Based Communities*—An example would be a research discovery that affects primarily people living in the coldest latitudes, or where it snows heavily.

40. *Aggregates of People*—This category refers to subpopulations of people *distinguished by particular characteristics that may indicate common concerns, needs or wants*, but who do not necessarily have a common interest or mission and therefore do not constitute communities.

    41. *Ability Level Subpopulations*—Subpopulations defined according to level of ability/proficiency on general intellectual functioning or specific skills—for example, gifted, typical, disadvantaged, or skilled, semi-skilled, unskilled.

    42. *Age Subpopulations*

    43. *Educational Level Subpopulations*

    44. *Income Level Subpopulations*

    45. *Occupation Subpopulations*

    46. *Physical Disability Condition Subpopulations*

    47. *Race Subpopulations*

    48. *Sex Subpopulations*

    49. *Other Such Aggregates*

50. *Other Audiences*—Examples would be the natural environment that is affected by university-sponsored research (which in turn would be expected to have impacts on audiences such as individuals and communities) and populations of animals (such as the animals affected by efforts to keep depleted species from becoming extinct or by the development of veterinary medicines).

[a]Reprinted from Lenning, Lee, Micek, and Service (1977), page 24.



BEST COPY AVAILABLE

The interaction between the producer/facilitator of educational outcomes and the audience receiving or being affected by outcomes is also an important variable. Instituions supply educational goods and services because these are desired or demanded by various members of the community and larger society (or at least the institutions perceive a demand for the goods and services). In exchange, the institution and its programs receive financial and other necessary resources, including such nonpecuniary returns as status and praise. To be most effective in producing the diplomas, knowledge, skills, and other outcomes demanded by their clientele and funders, institutions need to know the costs of production and the impacts these goods and services will have on individuals and society. Such knowledge should help institutions obtain greater returns on the investments being made in them.

4. Functional Area. The life of any individual, group, institution, or community can be viewed as involving several functional areas, and the outcomes of educational programs and institutions impinge on these areas. An understanding of particular educational outcomes can thus be facilitated by delineating each major functional area affected by educational institutions and programs. Here is one possible breakdown of outcomes by functional area: (1) economic (earnings, promotions, job opportunities, labor productivity, income distribution, growth of the national income), (2) educational/technological (degrees, reading habits, writing habits, educational level of society, advancement of scientific and technological knowledge, dissemination of new knowledge), (3) political (political attitudes, skill in evaluating political candidates, participation in civic activities, public policy development, election outcomes, international

relations; and (4) social/cultural/personal (religious attitudes appreciation of art, human relation skills, personality growth, crime rates, changes in traditional social values).

5. Time. As Havighurst (1952) has suggested in his discussion of "developmental tasks," certain outcomes should be expected at particular points in one's educational career. Outcomes are difficult to bring about before the recipient is ready for them. Thus the time that an outcome occurs can be revealing. Duration or persistence of the outcome is also a time-related factor that can have importance for analytic purposes. Some outcomes are of short term--a college football game, for example. Other outcomes are lasting, such as development of a vaccine for influenza in a university department of medicine. It should be kept in mind, however, that the dividing line between short term and long term depends on situation and viewpoint. One person could consider an outcome that persists until one year after graduating from college as a short-term outcome, while another person might consider this same outcome to be long term. The basic point is that both time of occurrence and duration are important for collecting data about educational outcomes, in analyzing and interpreting such data, and to guide planning for outcomes.

## Conclusion

The key question about the framework presented is the extent to which it appears to fulfill its intended role as a generally accepted and operationally useful basis for understanding and describing educational outcomes. Is the framework conceptually complete and nonredundant? If not, what are the significant omissions or overlaps? Can the framework be the basis for consensus about the nature of educational outcomes and factors associated with their understanding? Can the framework effectively support operational tasks such as

delineating outcome possibilities, planning for outcomes, developing outcome measures, analyzing and interpresting outcomes information, and communicating about the broad range of education outcomes? Preliminary evidence and experience (Lenning 1977a) indicate that we can give a positive response to these questions. However, much more questioning, testing, and development remains to be done. The entire arena is rich in scope and fraught with complexity. We hope that this paper takes a step toward untangling that complexity without compromising the attendant richness.

## REFERENCES


Bowen, H. R. "The Products of Higher Education." In Evaluating Institutions for Accountability. Edited by H. R. Bowen. San Francisco: Jossey-Bass, 1974.

Collier, D. J. Program Classification Structure--Second Edition. Boulder, Colo.: National Center for Higher Education Management Systems, 1978.

Cook, T. J., and Scioli, F. P., Jr. "A Research Strategy for Analyzing the Impact of Public Policy." Administrative Science Quarterly 17 (1972): 328-339.

Derr, R. L. A Taxonomy of Social Purposes of Public Schools: A Handbook. New York: David McKay, 1973.

Dye, T. R. Understanding Public Policy. 2nd ed. Englewood Cliffs, N. J.: Prentice-Hall, 1975.

Easton, D. A Framework for Political Analysis. Englewood Cliffs, N. J.: Prentice-Hall, 1965.

Gross, B. M. "The State of the Nation: Social Systems Accounting." In Social Indicators. Edited by R. A. Bauer. Cambridge, Mass.: Massachusetts Institute of Technology Press, 1966.

Gross, P. F. "A Critical Review of Some Basic Considerations in Postsecondary Education Evaluation." Policy Sciences 4 (1973): 171-195.

Havighurst, R. J. Developmental Tasks and Education. 2nd ed. New York: David McKay, 1951.

Lenning, O. T. The Outcomes Structure: An Overview and Procedures for Applying it in Postsecondary Education Institutions. Boulder, Colo.: National Center for Higher Education Management Systems, 1977a.

Lenning, O. T. Previous Attempts to "Structure" Educational Outcomes and Outcome-Related Concepts: A Compilation and Review of the Literature. Boulder, Colo.: National Center for Higher Education Management Systems, 1977b.

Lenning, O. T., Lee, Y. S., Micek, S. S., and Service, A. L. A Structure for the Outcomes of Postsecondary Education. Boulder, Colo.: National Center for Higher Education Management Systems, 1977.

Parsons, T. The Social System. New York: Free Press, 1951.

Robinson, J. A., and Majak, R. R. "The Theory of Decision-Making." In Contemporary Political Analysis. Edited by J. C. Charlesworth. New York: Free Press, 1967.

Schalock, H. D. "Learning Outcomes, Learning Processes and the Conditions of Learning." *In The Cognitive Domain: A Resource Book for Media Specialists*, pp. 37-132. Edited by J. V. Edling. Washington, D.C.: Gryphon House, 1972.

Schalock, H. D., et al. The Oregon Studies of Research, Development, Diffusion, and Evaluation. Vol. 1: Summary Report. Monmouth, Ore.: Teaching Research, 1972.

# A CONCEPTUAL FRAMEWORK FOR IDENTIFYING AND ASSESSING NEEDS IN POSTSECONDARY EDUCATION

Oscar T. Lenning
Senior Staff Associate
National Center for Higher
Education Management Systems
P.O. Drawer P
Boulder, Colorado 80302
303/492-8465

Paper Presented at the Session "Balancing Needs and Resources," Association for Institutional Research Annual Forum, Houston, Texas, May 22, 1978.

All social programs in our society are in response to assumed or perceived needs, although observers wonder sometimes whether it is not the needs of the provider (for financial support, for nonpecuniary benefits such as status and prestige, for survival, for growth, etc.) rather than the needs of the receiver of the services that primarily stimulate social services into happening. The concept of need is clearly an integral part of our culture. Most of the great litarary classics are built around needs and how they are or are not met. Satisfying important human needs is the central theme of almost all commercial advertising, political lobbying and advocacy, and educational jargon.

Given that the concept of "need" is a primary driving force within education, including postsecondary education, the focus naturally turns to the analysis of which needs are most important, which are most feasible to meet, or which should receive priority attention in determining how available educational funds and other resources (such as staff, facilities, methodologies) should be expended. And during a period of projected enrollment decline and probable financial retrenchment, an objective analysis of needs becomes especially important for discerning which areas to maintain and which to cut back. Thus, the theme of the 1978 Forum of the Association for Institutional Research is "Balancing Needs and Resources." To insure such a balance, it is important to identify and assess effectively both the needs and the resources available. On the one end, however, there are serious difficulties related to identifying and assessing needs in postsecondary education - whether it be needs at the institutional, the state, or the national level.

It is only recently that postsecondary education people, other than those in the community colleges, have expressed much interest in conducting formal,

objective studies to identify and assess needs. Fortunately, however, a significant body of knowledge about what has been called "Needs Assessment" has been developed over the last decade by educators at the elementary and secondary levels, from which postsecondary educators can borrow. Furthermore, noteworthy developmental work is also now taking place in postsecondary education.

In spite of the developments that have taken place and the needs assessment models that have been developed, needs assessment is still a largely undeveloped area - for example, see the discussion by Witkin (1975). Many of the developmental efforts have been "piecemeal," and a conceptual framework that can tie all of the pieces together and guide practice has been missing. Therefore, from April through October of 1978, NCHEMS staff conducted a comprehensive review of the needs assessment literature pertinent to the concerns of postsecondary education. The purpose of this effort was to sort out a comprehensible total picture regarding needs assessment and to develop a useful conceptual framework for this area. Unexpectedly, several hundred relevant literary sources were identified. This paper is based on the review of that comprehensive literature search (Lenning, Cooper, and Passmore, forthcoming).

The demand for systematic, objective, and concrete needs assessment information will undoubtedly increase as rational planning models become more widely used within postsecondary education institutions and agencies. The ability to objectively assess needs and to effectively translate them into institutional and program responses will thus be expected to become increasingly more important in the years ahead. It is hoped that this preliminary formulation of a conceptual framework for needs assessment will lead to increasingly more-refined conceptual formulations and improved assessment models that will be useful for needs assessment efforts in postsecondary education.

## The Concept of Need

A major problem in the area of needs assessment has been the lack of a good definition of need. Conceptions of need that are expressed in the various literature are not consistent, and often they are vague and nonspecific. Almost all needs assessment models have used a "discrepancy" definition, but as illustrated by Coffing and Hutchinson (1970), such a definition is too limited in its focus. Scriven (1977) cites the problem in colorful terms:

> Needs assessments have been for some time the most ludicrous spectacle in evaluation. The usual "models" are farcical and decisions based on them are built on soluable sand. One sign of the extent of the problem is the failure to begin with a tolerable definition of need....Is a need a discrepancy between the actual and the ideal (a formula I used to like)? No, because we often need to improve and know how to, without knowing what the ideal would be like. There is some attraction about adding the requirement that x must be feasible, since it seems odd to say that one could need something that wasn't possible. But that would eliminate the motivation for, e.g., medical breakthroughs....[P. 25]

### Different Aspects of the Concept of Need

Needs are viewed in different ways by those in the various disciplines. For example, in the fields of biology, physiology, and medicine needs are interpreted in terms of what will contribute to the efficient and effective functioning, and the survival and growth, of the human organism. Educators also tend to view needs in terms of individuals, but the focus here is more often on effective and efficient functioning, survival, and growth within the community or society. In psychology needs are largely interpreted in terms of the perceptions of individuals. Psychologists usually view need as a learned construct (taught or based on natural experience) used to indicate a perception of disequilibrium or unsatisfactory condition for which pressure/need exists to right the situation. Another way to state this is that need is a personal tension and means appropriate for meeting a desirable goal or condition, as perceived by an individual.

Some psychologists would broaden this to include groups of people, and they construe it as a force that pressures a person or a group to reduce or eliminate the discrepancy between what is perceived as desired and what perceptions or experiences indicate is currently the case. Sociologists, in turn, focus more on groups and society. They see needs as indicators of problems that must be solved, plus types and levels of competence and roles (and their integration) that must occur, for individuals, groups, and organizations to function effectively as social units, and within a social community or society at large.

All of the above are legitimate types of needs that must be included in any generic definition of needs for use in postsecondary education. The discrepancy definition of need guiding almost all formal needs assessment efforts and models up until now - the amount of discrepancy or gap that must be filled, through increased fulfillment or lowered threshholds of desirability, in order to bring the actual level of fulfillment (in terms of processes, procedures, conditions, outcomes, or results) up to the ideal level or condition - does not meet this condition. Neither does Coffing and Hutchinson's (1974) proposed alternative that need is a desired condition or state that may or may not be the current condition. Scriven (1977) was also bothered by the commonly accepted discrepancy concept of need, and proposed a formula as a definition:

> z needs x = z would (or does) significantly benefit from x and z is now (or would be, without x) in an unsatisfactory condition. (p. 25).

To illustrate this definition, let us suppose that z represents a college student, and x represents the particular knowledge and skills necessary to obtain a job. If we say that the student NEEDS the knowledge and skills in order to obtain a job, we mean that:

(a) the student would (or does) significantly benefit from the knowledge and skills,

(b) the student is now (or would be, without the knowledge and skills) in an unsatisfactory condition.

Scriven's definition adds important new clarifications, as he points out in his rationale:

> . . . at least it avoids the usual fallacies of a definition--explicit or implicit--of need in terms of wants or preferences (children may need a cavity filled but they certainly don't want it done; conversely, people may think they need laetrile or CAI with Braille keys but it doesn't follow that they do.) Do you need a million dollars? No. Would you significantly benefit from it? Yes. Hence we can't omit the second clause in the definition, which reminds us that needs are (typically) necessities not luxuries. (p. 25)

Scriven above makes the important point that wants or preferences are not the same thing as needs. Needs may be present that people do not recognize because of a lack of knowledge, because the need is being fulfilled and there is no discrepancy, or because it is being masked by other needs that demand attention. Similarly, a person may want something merely so someone else cannot have it, for the purpose of attracting attention, or because others have it. A want in such a case may be an expression of needs, but not the need expressed directly by the want (the expressed need is not the real need.) Therefore, most marketing research efforts and educational needs assessments are incorrect when they equate opinions, expressed desires, wants, or demands to needs. This is not to negate the usefulness of such information, which may provide good indications of needs that are present, and, especially if the wants are referred to by respondents in severe and critical terms (Taylor, Vinebery and Rufford, 1974.) But equating wants to needs causes people to not look for other types of info-mation that could confirm whether those wants are valid and reliable indicators of need.

A New Definition of Need

All of the definitions mentioned in the preceding section are legitimate concepts of need, and each defines a particular kind of need. Thus, what is called for is a definition that is broad or generic enough to include all of those specific types of need and show how they relate to one another. Lenning, Cooper, and Passmore (forthcoming) have proposed a new definition of need that they believe has some validity in this respect:

> A NEED is a necessary or desirable condition, state or situation--whether it be an end result that is actuality (met need) or a discrepancy that should be closed between a current or projected actuality and a necessary or highly desirable end result (unmet need)--as judged by a relevant person or group using multiple objective criteria that have been agreed upon.

This definition is a combination of discrepancy and level of necessity, where the amount of need varies directly with level of necessity and inversely with amount of discrepancy. Therefore, both of the following statements of need are valid according to this definition: "our students' needs for job information and employer contacts are well taken care of by the placement office on this campus," but "they have a serious need for more counseling prior to their interviews with prospective employers." This definition is also congruent with Burton and Merrill's (1977) observation that solutions in cases of unfulfilled (unmet) needs can involve both increased fulfillment and lowered threshholds of desirability or satisfaction.

This definition is pertinent to all of the different types of need outlined in the following section. It is also pertinent whether one is referring to needs: of prospective or enrolled students, of the college or program, of faculty or staff, of the local community or of the region, of the state or nation, or of society at large or other entities and groups. It also allows persons to speak in terms of past tense, current tense, and future tense when talking about needs: former needs, current needs, or projected

needs.

According to this definition, it is proper to use self report of wants as an indicator of need, but the self report must have been gathered in an objective, unbiased manner, and there must also be other supporting evidence. Multiple sources of evidence, or multiple criteria as this is called in the definition, will normally lead to increased assurance of actual need (increased reliability and validity) if objectivity is of paramount concern when gathering each type of evidence.

This definition still has a potential problem in that it does not specify when the necessity or desirability becomes significant enough to be classified a need, or when the discrepancy between fulfillment and unfulfillment becomes significant enough to warrant that the need is partially unmet. This is in fact necessary, however, if it is to be generic in nature and apply to all of the types of need that have been identified by different people. On the other hand, the definition does indicate that this is properly determined by the judgement of a relevant person or group (who is a relevant person or group depends on the situation) using multiple, objective, agreed upon criteria (who must reach agreement is not specified, but once again it varies with the situation).

## Types of Outcomes for Whom

If one is going to attempt to identify and assess needs, it is important to be very clear about whose needs are of concern. The tendency of needs assessors has been to not be specific enough about whose needs are being identified and analyzed, and to not separately consider the needs of specific subgroups. Similarly, needs assessors too often do not deliniate ahead of time which specific types of needs are of concern to them.

Whose Needs Are of Concern?

As mentioned earlier, the focus of a needs assessment study can be on needs within the institution (for example, courses, programs, departments, enrolled students, faculty, or administrators) or outside of the institution (for example, prospective students, groups or organizations within the local community or the state, or society at large). It is important to delineate at the earliest stages of the study exactly whose needs are of concern (where "whose" could even include entities like organizations and the ecological environment).

A comprehensive, two-level classification of groups and entities for which someone in postsecondary education might want to assess needs was developed as a part of the NCHEMS Outcomes Structure (Lenning et al, 1977). It is presented in Figure 1. The focus there was on "audiences," the persons, groups, or other entities that could potentially receive or be affected by postsecondary education outcomes. Various needs assessments have been conducted for many of these groups and communities.

The listing of Figure 1 does not provide the detailed third-level categories needed for many outcomes studies at the institutional and program levels. The reason additional levels of detail are not included is that any further subdivisions could be based on several equally valid factors, and one user of the Structure would want one breakdown, while another person with a different philosophy, problem, and context would want a second breakdown. For example, students within a program could be usefully subdivided into: (1) those majoring in the program versus those only taking courses in the program, (2) age groupings, (3) commuter students versus resident students, (4) underclassmen versus upperclassmen, (5) groupings according to disadvantaged status, (6) men and women, (7) groupings according to life and career goals or

## Figure 1

## CATEGORIES OF PERSONS, GROUPS, AND OTHER ENTITIES OF POSSIBLE CONCERN IN ASSESSMENTS OF NEEDS[a]

10. *Individual/Group Clients*—This category refers to persons or groups of persons who are direct clients of the postsecondary education unit of concern and/or their immediate associates, such as family and relatives or peers.

    11. *Students*—Individuals or groups of individuals who currently are enrolled in the program, institution, or system of postsecondary education.

    12. *Former Students*—Individuals or groups of individuals who formerly were enrolled in the program, institution, or system of postsecondary education.

    13. *Family and Relatives of Students or Former Students*

    14. *Peers and Associates of Students or Former Students*

    15. *Faculty*

    16. *Staff Other than Faculty*

    17. *Other Individual/Group Clients*—An example would be an individual who is none of the above but is served by an advisory service offered by the college.

20. *Interest-Based Communities*—This category refers to large groups that are identified as entities working toward a *well-defined interest or mission.*

    21. *Private Enterprise Communities*—Communities where a major purpose is financial remuneration and profit—for example, corporations, small businesses, and farmers.

    22. *Association Communities*—Communities where members belong on the basis of affiliation rather than employment, such as unions and professional societies.

    23. *Government Communities*—Communities designed to administer government regulations and services, such as city hall, state department of education, and legislative communities.

    24. *Nongovernmental/Public Service Communities Other than the Institution Producing the Outcome*—Nonprofit service organizations, such as schools, hospitals, welfare agencies, philanthropic foundations, colleges (other than the college producing the outcome), and research organizations.

    25. *Institution or Institutional Unit Producing the Outcome*—The postsecondary education institution and/or units within that institution that are perceived as the producer/facilitator of the outcome(s) of concern.

    26. *Other Interest-Based Communities*—An example would be an ad hoc coalition task force of representatives from two or more of the above areas.

30. *Geographic-Based Communities*—This category refers to large groups defined on the basis of *functional territorial boundaries.*

    31. *Local Community*—A township, city, county, metropolitan area, or other type of locality having particular boundaries. It is not necessarily restricted to the legal or jurisdictional boundary, but the functional one in which the impact of the institution is (or should be) directly and physically felt. The boundaries will vary with the institution/program and outcome of concern.

    32. *The State*

    33. *A Region*—An aggregation of states or parts of states.

    34. *The Nation*

    35. *An International Community*

    36. *Other Geographic-Based Communities*—An example would be a research discovery that affects primarily people living in the coldest latitudes, or where it snows heavily.

40. *Aggregates of People*—This category refers to subpopulations of people *distinguished by particular characteristics that may indicate common concerns, needs, or wants,* but who do not necessarily have a common interest or mission, and therefore do not constitute communities.

    41. *Ability Level Subpopulations*—Subpopulations defined according to level of ability/proficiency on general intellectual functioning or specific skills—for example, gifted, typical, disadvantaged, or skilled, semi-skilled, unskilled.

    42. *Age Subpopulations*

    43. *Educational Level Subpopulations*

    44. *Income Level Subpopulations*

    45. *Occupation Subpopulations*

    46. *Physical Disability Condition Subpopulations*

    47. *Race Subpopulations*

    48. *Sex Subpopulations*

    49. *Other Such Aggregates*

50. *Other Audiences*—Examples would be the natural environment that is affected by university-sponsored research (which in turn would be expected to have impacts on audiences such as individuals and communities) and populations of animals (such as the animals affected by efforts to keep depleted species from becoming extinct or by the development of veterinary medicines).

---

[a]Reprinted from Lenning, Lee, Micek, and Service (1977, p. 24), where the focus was on audiences - individuals, groups, communities, organizations, etc. receiving or being affected by particular outcomes of concern.

aspirations levels, and so forth. Rather than provide alternative formal breakdowns of each second-level category, the decision was made to provide procedures for users of the Structure to develop their own more-detailed breakdowns tailored to their specific problem, concern, or other need context (Lenning, 1977a). Such more-detailed categories of groups are needed for planning needs assessment studies also. In planning a curricular program for students, for example, it is important to consider the special needs of important student subgroups.

An additional word should be said about the needs of groups, organizations, and communities as compared to the needs of individuals. Many people have assumed that the needs of a group are merely aggregations of the needs of individuals within that group. It is true that some community and class needs are aggregations of individual needs. For example, an aggregate need exists when more than half of the freshmen entering a college have reading problems. What might have been an individual problem has become a community problem calling for administrative action. There are group needs that are not aggregate needs, however. These tend to be organizational in nature, relating to the effective functioning of the group as a body and to survival and growth of the group. It is even probable that some of these group needs will conflict with certain aggregations of individual needs, in particular cases.

## What Types of Needs Are of Concern

Before beginning a needs assessment study, and after determining whose needs are of concern, it is important to specify the types of needs with which the study will concern itself. So that the boundaries of focus are clearly delineated, this should be done along several type dimensions as discussed later in this section.

Most needs assessments at the elementary and secondary education level have focused on the needs for particular educational outcomes. Needs for outcomes are important in postsecondary education also, and there are many types of potentially important outcomes on which one could focus. Lenning (1977b) has reviewed the literature for categorizations of outcomes and related concepts such as goals, and found almost 90 of them, some focusing on outcomes for individuals, some on outcomes for society, and some for both. Based on that review and other work, a comprehensive taxonomy of types of postsecondary education outcomes was developed (Lenning et al, 1977, pp. 55-66), which can be used in planning and developing items for a needs assessment survey questionnaire.

Needs for particular outcomes imply needs for process activities. For example, student outcomes needs may suggest a need for special methodologies, environments, faculty-student ratios, teaching strategies, instructors, innovative techniques, etc. Such process needs can also usefully be focused on directly, not merely inferred from assessed needs for particular outcomes. In addition, there are needs in postsecondary education that are less directly related to outcomes, and which elementary and secondary educators tend not to be concerned, such as needs for financial aid, needs for information about institutions and programs, and needs for lodging facilities.

When assessing needs, the focus can be broad or general and diffused ("wide-band study") or it can be concentrated or specific and detailed ("narrow-band study"). The wide-band study will be concerned with broad categories of needs while the narrow-band study will be concerned with specialized and detailed need categorizations. Lenning, Cooper, and Passmore (forthcoming) have identified a number of different need type classifications, some of them broad-band in focus (e.g., Maslow's [1968] need hierarchy, Parsons'

[1950] community need categories, and Bradshaw's Taxonomy of Social Need [1972]) while others have a narrow-band focus (e.g., Murray's [1978] categories of manifest and latent needs, Kinnick's [1975] Taxonomy of Information Needs of Prospective Students, and the Mooney Probelem Checklist scales [Pagels, 1973]).

Many of the categorizations of needs that have been developed place needs into categories along a continuum on a particular dimension. Examples of such dimensions are: developmental tasks corresponding to chronological age, basic versus learned (or derived) needs, personal versus social problems resulting in needs, maintenance versus incremental needs, conscious versus unconscious needs, general versus specific needs, current versus projected needs, critical versus routine needs, instructional versus noninstructional needs, economic versus noneconomic needs, needs for goods or products versus needs for services, easy-to-measure needs versus difficult-to-measure needs, and short-term or short-duration needs versus long-term or long-duration needs. Thinking in terms of such dimensions can be helpful for determining and setting the appropriate and desired boundaries of focus in planning for an assessment of needs. Thinking in such terms can also help one in setting needs assessment focus priorities within those boundaries.

## Assessing Needs

As has been discussed, one must specifically determine whose needs, and what types of needs for each group, are to be assessed before plans are begun for conducting a needs assessment study. Now some important conceptual considerations relating to the conduct of the assessment itself will be discussed, briefly.

### Models for Assessing Needs

A number of needs assessment models have been developed for use in the educational setting. Most, but not all, have been discrepancy based. Those developed at the elementary and secondary education levels have tended to be

general in their focus. Thus, some of the concepts and procedures they discuss may be useful also at the postsecondary level, for example: Coffing and Hutchinson (1974), English and Kaufman (1975), Hoepfner et al (1972), Klein et al (1971), Lewis (1973), New Jersey State Department of Education (1974), Read (1974), and the various other models reviewed by Adams (1976), Kaufman (1971), and Witkin (1975, 1976). Conversely, postsecondary education models have tended to be more diverse and specific in their focus: vocational, occupational, and continuing education needs (Adams, 1976; Brown, 1974; Keim and others, 1975; Putnam, 1970; Smith, 1968; Tucker, 1973); environmental needs (Aulepp and Delworth, 1976); course-level needs (Burton and Merril, 1977); community service needs (Central Florida Community College Consortium, 1973; Gollattscheck et al, 1976; League of California Cities, 1975; Selgas, 1977); needs of the handicapped student (Coffing, Hodson, and Hutchinson, 1974); community information and service needs (Gotsick, 1974); overall curricular needs (Gray, 1974; Hamilton, 1973; Pagels, 1973); administrative functioning needs (Higher Education Management Institute, 1977); prospective students' needs for institutional and program information (Kinnick and Lenning, 1976; Lenning and Cooper, 1978); state-level needs for career education (McCaslin and Lave, 1976); needs related to performance problems (Mager and Pipe, 1970); institutional goal needs (Peterson, 1976); curricular needs in programs for emergency ambulance personnel (Shook, 1969); and student financial aid needs (the models developed by ACT and CSS). Diverse and specialized models such as many of those above demonstrate the importance of tailoring concepts and procedures to the uniqueness of the conditions and situation. For example, an assessment of the curricular needs in a program for emergency ambulance personnel has to be quite different than one to assess curricular needs in a fine arts program, even though they are both focusing on curricualar needs and are both using a critical incident technique.

Several writers have attempted to classify needs assessment models into types that show relationships among them and distinguish among their emphases and

and characteristics. One way to classify needs assessment approaches is according to the purposes for which they are designed. For example, we can classify approaches according to those focusing on planning versus those focusing on policy formulation, those focusing on curriculum development versus institutional goal setting, and those aimed at understanding problems versus those aimed merely at identifying problems. Lenning, Cooper, and Passmore (forthcoming) identified 30 different general purposes served by needs assessment as discussed in the literature. (In differentiating model types, the League of California Cities [1975] grouped according to three broad, overall purposes: social policy, exploratory, and program needs assessments.) Furthermore, these purposes can vary according to the types of needs being assessed, whose needs are being assessed, who is doing the assessing and for whom, etc. Another way to classify needs assessment approacnes is according to time of need being assessed, such as focusing on current needs versus focusing on projected needs (or both) or short-duration needs versus long-duration needs. Some additional model classification dimensions that could be useful are according to: population types being assessed, such as Baumheier and Heller's (1974) five population/purpose types - secondary data analysis, general population surveys, service population surveys, service provider surveys, and political and community surveys; breadth and detail of focus, such as the "narrow band" and "wide band" types of studies mentioned earlier; concreteness of the data collected, such as Anderson and Associates (1976) reference to "objective" and "subjective" needs assessments; approaches used for collecting data and conducting analyses, such as the four strategy types outlined in the New Jersey Department of Education (1974) planning handbook and Scriven's (1977) categorization of common study types; and how the data are interpreted, such as Kaufman's (1972) inductive, deductive, and classical model differentiations.

## Planning and Operational Considerations

Collecting valid and reliable evidence of need(s) is a necessary and crucial part of every needs assessment study. For any met and unmet need, a number of relevant indicators and measures usually apply. Generally, some will be better

indicators of the presence of the need than will others, and such factors as whose needs are being assessed can affect the validity of the indicator or measure. Therefore, multiple indicators and measures should be used whenever feasible. This gives increased assurance of validity (that it is a real need), if they all indicate the same thing about need, plus it facilitates tailoring the data collection system to different groups. When one measure is less valid, another measure may be more valid, and vice versa.

Currently, most need surveys are administered solely to the client groups whose needs are being assessed. It is important not to ignore client self-reports about their perceived needs, but other data are needed as well. Implications about need can also be derived from client reports about such things as school environment, their peers, disappointments or dissatisfactions, successes and achievements, activities, problems, and complaints. Baird (1976), for example, discusses the importance of identifying and remedying "brass tacks." Surveys should be administered to relevant others for their observations and judgments, also. They perhaps can be more objective, and may have more experience and expertise in making such judgments. Profiles showing how different groups view the situation can be quite revealing, and the pattern of similarities and discrepancies may significantly facilitate understanding about the needs.

When outcome needs are of concern, performance measures and history (trends) become very important, but self- and other-report data are still desirable also. Other useful supplemental data include frequency counts from institutional records concerning such things as attendance, complaints, amount of use (and ratings) of services, requests received for assistance of various kinds, etc. Similarly, statistics from governmental and other community agencies can provide useful supplemental evidence for studies of community needs. What others have found in similar types of institutions, programs, or locales can also be useful supplemental evidence if care is taken to examine closely how the other situations were similar and exactly how they were different from the one of concern. Concerning all of these types of data that have all ready been collected (which some

have termed "secondary data"), although they save costs and time in addition to providing useful supplemental evidence, they can lead to problems if great care is not taken in their use. Boyd and Westfall (1972) provide criteria for determining when particular secondary data are okay for a particular situation and use, and they also discuss precautions that can help one avoid the potential pitfalls.

Concerning data collection methods, needs assessors generally limit themselves to several types of traditional instruments: questionnaires, paper and pencil tests and interviews. However, other methods that may be just as reliable and valid for a particular case should be considered as alternatives and supplements for the traditional instruments. Lenning (1978) found fifty different methods in the literature that were recommended for assessments of various kinds, including needs assessments. Yet most needs assessors never even consider such nontraditional methods that have been shown to be practical, valid, reliable, and cost efficient for particular purposes and contexts. As with indicators and measures, and for the same reasons, the use of multiple data collection methods is desirable - and the large variety of data collection methods available can facilitate this.

Interpretation and use of needs data are also crucial elements in a needs assessment study, and too often the application of needs assessment results is ineffective. If needs data are going to have practical impact, the users of the needs assessment results must be precisely identified early in the assessment planning process, prior to conducting the study. Input should be solicited from them concerning their specific concerns and what needs information will be helpful to them in their decision making. Once analyses are completed, brief, concise reports tailored to each person's information needs should be sent to them. Additional ways to increase the impact of the results are also available (Lenning, Cooper, and Passmore, forthcoming).

Some needs assessment approaches only try to identify needs. Yet, more is needed: (2) a ranking of needs according to how critical they are, and (3) information that can help one to understand why the need occurred. In addition to not attempting to perform the last function above, almost all of the available

assessment models, even though they may rank the needs, make use of over-simple and ineffective decision rules that do not consider enough factors or consider each factor in isolation from the others. Another problem with many of the models is that they key so much on current goals and objectives that the results of such assessments are not useful for evaluating current institutional and program goals, for modifying or reformulating them, or for developing new goals to meet changing conditions. Lenning, Cooper, and Passmore (forthcoming) explore these problems in detail and discuss some possible solutions. They also provide in-depth and extended discussion about all of the other topics covered in this paper. Needs assessment clearly is a viable tool to assist administrators and faculty members who are concerned about meeting client and community needs. However, much more development in this area needs to take place before it can began to reach its full potential.

REFERENCES


Adams, K.A. National Large Cities Vocational Education Needs Study. Ph.D. dissertation, Ohio State University, 1976. The dissertation has been published as a research report under the same title by the Center for Vocational Education, Ohio State University, Columbus, Ohio.

Anderson, S.B., Ball, S., Murphey, R.T., & Associates. Encyclopedia of Educational Evaluation. San Francisco: Jossey-Bass, 1976.

Aulepp, LuAnne, & Delworth, E. Training Manual for an Ecosystem Model: Assisting and Designing Campus Environments. Boulder, Colo.: Western Interstate Commission for Higher Education, 1976.

Baird, L.L. Structuring the Environment to Improve Outcomes. In Improving Educational Outcomes: New Directions for Higher Education. Edited by Oscar T. Lenning. San Francisco: Jossey-Bass, 1976.

Baumheier, E.C., & Heller, G.A. Analysis and Synthesis of Needs Assessment Research in the Field of Human Services. Denver, Colo.: Center for Social Research and Development, University of Denver, July, 1974.

Beatty, P.T. A Process Model for the Development of an Information Base for Community Needs Assessment: A Guide for Practitioners. Paper presented at the annual meeting of the Adult Education Research Conference, Toronto, 1976, ED 128 616.

Boyd, H.W., & Westphall, R. Marketing Research. 3rd Ed. Homewood, Ill.: Richard D. Irwin, Inc., 1972.

Bradshaw, J. The Concept of Social Need. New Society, 1972, 640-643.

Brown, B.W. Methods of Needs Assessment Used in Continuing Education Program Development at Two Year Colleges in the State of New York. 1974. ED 103 610.

Burton, J.K., & Merril, P.F. Needs Assessment: Goals, Needs, and Priorities. Unpublished paper. Lincoln, Nebraska: University of Mid-America, 1977. Draft of a chapter for a forthcoming book.

Central Florida Community Colleges Consortium. Educational Needs Assessment: A Simulation Model for Humanistic Planning. Gainesville, Florida: Center for Community Assessment, University of Florida, May 1973. ED 099 025.

Coffing R.T., Hodson, W.A., & Hutchinson, T.E. A Needs Analysis Methodology for Education of the Handicapped, Final Report of Comm. Program No. 85-404. New Haven, Conn.: Area Cooperative Educational Services, 1973. Cited in Coffing and Hutchinson, 1974.

Coffing, R.T. & Hutchinson, T.E. Needs Analysis Methodology: A Prescriptive Set of Rules and Procedures for Identifying, Defining, and Measuring Needs. Paper presented at the annual convention of the American Educational Research Association, Chicago, 1974. ED 095 654.

English, F.W., & Kaufman, R.A. Needs Assessment: A Focus for Curriculum Development. Washington, D.C.: Association for Supervision and Curriculum Development, 1975. ED 107 619.

Gollattscheck, J., Harlacher, E.L., Roberts, E., & Wygal, B.R. College Leadership for Community Renewal: Beyond Community-Based Education. San Francisco: Jossey-Bass, 1976.

Gotsick, P. Community Survey Guide for Assessment of Community Information and Service Needs. Public Library Training Institutes Library Service Guide Number Two. Morehead, Kentucky: Kentucky Applachian Adult Education Center, Morehead State University, 1974. ED 087 392.

Gray, R.W. Need Assessment Strategy in the Process of Educational Planning. Ph.D. dissertation, University of Pittsburgh, 1973. Dissertation Abstracts International, 1974, 35(2), 720-A.

Hamilton, D.L. A Survey of Educational Needs: Secondary School and Community College. Columbus, Ohio: Battelle Center for Improved Education, 1972 and 1973. Cited in Adams (1977).

Higher Education Management Institute. Needs Assessment and Planning: Managers Handbook. Preliminary Edition. Coconut Grove, Florida: Author, 1977.

Hoepfner, R., Bradley, P.A., Klein, S.P., & Alkin, M.C. A Guidebook for CSE/Elementary School Evaluation Kit: Needs Assessment. Boston: Allyn and Bacon, 1972.

Kaufman, R.A. Educational System Planning. Englewood Cliffs, New Jersey: Prentice-Hall, 1972.

Keim, W.A., & Others. A Manual for Establishing a Community College Community Services Program: A Practical Guide to the Community Based Performance Oriented Institution of Postsecondary Education. Blacksburg, Virginia: Virginia Polytechnic Institute and State University, 1975. ED 110 139.

Kinnick, M.K. Information for Prospective Students About Postsecondary Education: A Partial Assessment of Need. Ph.D. dissertation, University of Colorado at Boulder, 1975. Dissertation Abstracts International, 1975, 36(8), 5085-A. Part of the dissertation has been published as a research report under the same title by the Office of Institutional Research, Portland State University, Portland, Oregon.

Kinnick, M.K., & Lenning, O.T. The Information Needs of Prospective Students. Unpublished resource paper, National Task Force on Better Information for Student Choice, 1976. Available from the National Center for Higher Education Management Systems.

Klein, S.P., Hoepfner, R., Bradley, P.A., Wooley, D., Dyer, J.S., & Strickland, G.M. Procedures for Needs-Assessment Evaluation: A Symposium. CSE Report No. 67. Los Angeles: Center for the Study of Evaluation, UCLA Graduate School of Education, 1971. ED 055 111.

League of California Cities. Assessing Human Needs. Sacramento, Calif.: Author, 1975.

Lenning, O.T. The Outcomes Structure: An Overview and Procedures for Applying it in Postsecondary Education Institutions. Boulder, Colo.: National Center for Higher Education Management Systems, 1977. (a)

Lenning, O.T. Previous Attempts to Structure Educational Outcomes and Outcome-Related Concepts: A Compilation and Review of the Literature. Boulder, Colo.: National Center for Higher Education Management Systems, 1977. (b)

Lenning, O.T. Assessing Student Educational Progress. ERIC/Higher Education Research Currents, 1978. In AAHE College and University Bulleton, 1978, 30(7), 3-6.

Lenning, O.T., Cooper, E.M., & Passmore, J.R. Identifying and Assessing Needs in Postsecondary Education: A Review and Synthesis of the Literature. Boulder, Colo.: National Center for Higher Education Management Systems, forthcoming.

Lenning, O.T. & Cooper, E.M. Guidebook for Colleges and Universities: Presenting Information to Prospective Students. Boulder, Colo.: National Center for Higher Education Management Systems, 1978.

Lenning, O.T., Lee, Y.S., Micek, S.S., & Service, A.L. A Structure for the Outcomes of Postsecondary Education. Boulder, Colo.: National Center for Higher Education Management Systems, 1977.

Lewis, J.L. Needs Assessment Guidelines. Columbus, Ohio: Ohio Department of Education, Division of Planning and Evaluation, 1973. Cited in Adams (1977) and Witkin (1975).

Mager, R.R., & Pipe, P. Analyzing Performance Problems; Or You Really Oughta Wanna. Belmont, Calif.: Fearon, 1970.

Maslow, A.H. Toward a Psychology of Being. 2nd ed. Princeton, N.J.: Van Nostrand, 1968.

Morgan, J.M. Conducting Local Needs Assessment: A Guide. TM Report 44. Princeton, N.J.: ERIC Clearinghouse on Tests, Measurement, and Evaluation, 1975. ED 117 188.

Murray, H.A. Proposals for a Theory of Personality. In Explorations in Personality: A Clinical and Experimental Study of Fifty Men of College Age. Edited by Henry A. Murray and Others. New York: Oxford University Press, 1938.

New Jersey State Department of Education. Needs Assessment in Education: A Planning Handbook for School Districts. Trenton, N.J.: Author, 1974.

Pagels, C.F. The Development of a Process for Determining Specific Criteria for a Student Needs Based Curriculum. Ph.D. dissertation, University of Virginia, 1973. Dissertation Abstracts International, 1974, 34(10), 6368-A.

Parsons, T. The Social System. Glencoe, Ill.: Free Press, 1951.

Peterson, R.E. & Uhl, V.P. Institutional Goals Inventory Manual. Princeton, N.J.: Educational Testing Service, 1976.

Putnam, C.E. Development and Application of a Decision Making Model for Assessing Need for Occupational Education in a Community College. Ph.D. dissertation, University of Missouri, 1970. Dissertation Abstracts International 1970, 31(9), 2132-A.

Read, B. ESA Needs Assessment Procedure Manual. Austin, Texas: Educational Systems Associates, 1974. Cited in Adams (1977).

Scriven, M. Special Feature: Needs Assessment. Evaluation News, 1977, No. 1, 25-28. Available from Program Development Center. Aymer I. Hamilton Building, California State University--Chico, Chico, Calif. 95929.

Selgas, J.W. Community Educational Needs Assessment: The Capital Region of Pennsylvania. Harrisburg, Pa.: Harrisburg Area Community College, 1977.

Shook, L.L. Need Analysis: Adult Education Programs for Emergency Ambulance Personnel. Masters thesis, University of Iowa, 1969.

Smith, H.K. A Plan for Developing a Program of Adult Education to Meet the Needs of a Local Community. Ph.D. dissertation, Rutgers University, 1968. Dissertation Abstracts, 1969, 30(3), 1059-A. ED 037 600.

Taylor, E.N. & Others. Procedures for Surveying School Problems: Some Individual, Group, and System Indicators. Alexandira, Virginia: Human Resources Research Organization, 1974.

Tucker K.D. Educational Needs Assessment, A Simulation Model for Humanistic Planning. Paper presented at the annual convention of the Association of Educational Data Systems, New Orleans, April 1973. ED 087 413.

Witkin, B.R. Needs Assessment Models: A Critical Analysis. Paper presented at the annual convention of the American Educational Research Association, San Francisco , 1976.

Witkin, B.R. An Analysis of Needs Assessment Techniques for Educational Planning at State, Intermediate, and District Levels. Hayward, Calif.: Office of the Alameda County Superintendent of Schools, 1975, ED 108 370.

# USING THE NCHEMS OUTCOMES STRUCTURE TO TEST THE ADEQUACY OF OUTCOMES LISTS: TRYOUT AT A STATE UNIVERSITY[a]

Jean J. Endo
Researcher
Academic Affairs
University of Colorado
Boulder, Colorado 80309

Oscar T. Lenning
Staff Associate
National Center for Higher
Education Management Systems
P.O. Drawer P
Boulder, Colorado 80302

[a]Paper presented at the 1978 Annual Meeting of the Association for the Study of Higher Education; Chicago, Illinois; March 1978.

# USING THE NCHEMS OUTCOMES STRUCTURE TO TEST THE ADEQUACY OF OUTCOMES LISTS: TRYOUT AT A STATE UNIVERSITY

Jean J. Endo
University of Colorado, Boulder

Oscar T. Lenning
National Center for Higher Education Management Systems

All of the major activities conducted by administrators, faculty, and other professional staff members at postsecondary institutions are, presumably, aimed in some way toward bringing about "educational outcomes." In this "age of accountability," college administrators and others have become especially concerned about concretely identifying and understanding the impacts of their institution on students, the community, and society. After two years of concentrated effort, the National Center for Higher Education Management Systems (NCHEMS) developed an "outcomes structure," a new system for organizing outcomes and outcomes information for purposes of classification, analysis and decision-making (Lenning, Lee, Micek, and Service, 1977). Preliminary tryout and review of this structure suggests that it has potential use in: (1) stimulating people to realize the importance of having information about educational outcomes; (2) stimulating people to think more systematically and concretely about what they are trying to accomplish in their institutions and programs (and for whom); (3) helping institutional officials to identify educational needs, develop goals, translate goals into more concrete objectives, plan for the outcomes, evaluate the institution and its programs; and (4) improving communication about outcomes with clientele and concerned publics; and so forth (for example, several students and student personnel administrators interviewed at a couple of small colleges felt that the Structure could also be used to assist students in planning what they want to accomplish for themselves during college).

This is a report of one of the projects used to try out the NCHEMS Outcomes Structure in a preliminary way. It was conducted in the winter of 1977 by the

University of Colorado at Boulder. Over a period of several years, through surveys and interviews of important clientele groups, several extensive lists of intended outcomes were developed by staff of the Office of the Vice Chancellor for Academic Affairs on the Boulder Campus that were comprehensive for their planning needs. The NCHEMS Outcomes Structure was applied to these lists in a way that would reveal the adequacy of the coverage of those lists--using step-by-step procedures that had been developed at NCHEMS (Lenning, 1977). This process revealed several outcomes areas considered to be important that had been overlooked in developing the lists. The lists were modified, along with the Freshman Questionnaire which had been based in part on the lists. The remainder of this paper will go into detail about this project and its results.

## THE NCHEMS OUTCOMES STRUCTURE

The purposes of the Outcomes Structure have been outlined in the introduction to the paper. The Structure consists of three dimensions along which outcomes or information about outcomes can be placed and related to one another. The structure is based on a conceptual framework that defines six attributes of educational outcomes in postsecondary education plus five other factors that are important for understanding particular outcomes (Lenning, Micek, and Service, 1978; Lenning, Lee, Micek, and Service, 1979). The three dimensions of the structure are described below:

- Audience -- The "audience" dimension focuses on who or what receives or is affected by the outcome of concern, or is intended to receive or be affected by it. It has five broad categories, and subcategories for them, as outlined in Figure 1.

- Type of Outcome -- The "type-of-outcome" dimension focuses on whether the outcome results in maintenance (stabilization, reproduction, or preservation) or change (reorganization, modification, revision, or replacement), and on the basic entity within the audience that is maintained or changed. This dimension also has five broad categories, and each is subdivided into categories and subcategories of increasingly more detail and specificity, as outlined in Figure 2. Standard definitions are provided for every category and subcategory of this dimension, along with illustrative examples of outcomes measures and indicators for each.

- Time -- The "time" dimension focuses on when the outcome is expected to or does occur, and on how long the outcome persists. The categories and subcategories for the "time" dimension that are deemed most appropriate vary, depending on the audience of concern, on the philosophy of the person using the Structure, and on the context in which the Structure is being used. (For example, its use at the institution-wide level may very well require different time categories than its use at the institutional program level.) To illustrate this, two quite different student outcome sets of categories that could be used for the "time" dimension are shown in Figures 3 and 4. The one presented in Figure 4, is the time classification used by the University of Colorado at Boulder to follow the chronological path taken by new freshmen through their educational careers. Identification of the times when different data should be collected is valuable in planning.

# Figure 1

## CATEGORIES AND SUBCATEGORIES OF THE AUDIENCE DIMENSION OF THE NCHEMS OUTCOMES STRUCTURE[a]

10. *Individual/Group Clients*—This category refers to persons or groups of persons who are direct clients of the postsecondary education unit of concern and/or their immediate associates, such as family and relatives or peers.

    11. *Students*—Individuals or groups of individuals who currently are enrolled in the program, institution, or system of postsecondary education.

    12. *Former Students*—Individuals or groups of individuals who formerly were enrolled in the program, institution, or system of postsecondary education.

    13. *Family and Relatives of Students or Former Students*

    14. *Peers and Associates of Students or Former Students*

    15. *Faculty*

    16. *Staff Other than Faculty*

    17. *Other Individual/Group Clients*—An example would be an individual who is none of the above but is served by an advisory service offered by the college.

20. *Interest-Based Communities*—This category refers to large groups that are identified as entities working toward a *well-defined interest or mission.*

    21. *Private Enterprise Communities*—Communities where a major purpose is financial remuneration and profit—for example, corporations, small businesses, and farmers.

    22. *Association Communities*—Communities where members belong on the basis of affiliation rather than employment, such as unions and professional societies.

    23. *Government Communities*—Communities designed to administer government regulations and services, such as city hall, state department of education, and legislative communities.

    24. *Nongovernmental/Public Service Communities Other than the Institution Producing the Outcome*—Nonprofit service organizations, such as schools, hospitals, welfare agencies, philanthropic foundations, colleges (other than the college producing the outcome), and research organizations.

    25. *Institution or Institutional Unit Producing the Outcome*—The postsecondary education institution and/or units within that institution that are perceived as the producer/facilitator of the outcome(s) of concern.

    26. *Other Interest-Based Communities*—An example would be an ad hoc coalition task force of representatives from two or more of the above areas.

30. *Geographic-Based Communities*—This category refers to large groups defined on the basis of *functional territorial boundaries.*

    31. *Local Community*—A township, city, county, metropolitan area or other type of locality having particular boundaries. It is not necessarily restricted to the legal or jurisdictional boundary, but the functional one in which the impact of the institution is (or should be) directly and physically felt. The boundaries will vary with the institution/program and outcome of concern.

    32. *The State*

    33. *A Region*—An aggregation of states or parts of states.

    34. *The Nation*

    35. *An International Community*

    36. *Other Geographic-Based Communities*—An example would be a research discovery that affects primarily people living in the coldest latitudes, or where it snows heavily.

40. *Aggregates of People*—This category refers to subpopulations of people *distinguished by particular characteristics that may indicate common concerns, needs or wants,* but who do not necessarily have a common interest or mission, and therefore do not constitute communities.

    41. *Ability Level Subpopulations*—Subpopulations defined according to level of ability/proficiency on general intellectual functioning or specific skills—for example, gifted, typical, disadvantaged, or skilled, semi-skilled, unskilled.

    42. *Age Subpopulations*

    43. *Educational Level Subpopulations*

    44. *Income Level Subpopulations*

    45. *Occupation Subpopulations*

    46. *Physical Disability Condition Subpopulations*

    47. *Race Subpopulations*

    48. *Sex Subpopulations*

    49. *Other Such Aggregates*

50. *Other Audiences*—Examples would be the natural environment that is affected by university-sponsored research (which in turn would be expected to have impacts on audiences such as individuals and communities) and populations of animals (such as the animals affected by efforts to keep depleted species from becoming extinct or by the development of veterinary medicines).

[a]Reprinted from Lenning, Lee, Micek, and Service (1977), page 24.

Figure 2

FOCUS CATEGORIES AND SUBCATEGORIES IN THE TYPE-OF-OUTCOME DIMENSION OF THE NCHEMS OUTCOMES STRUCTURE[a]

| Category Code Number | Entity Being Maintained or Changed |
|---|---|
| 1000 | *ECONOMIC OUTCOMES* |
| 1100 | Economic Access and Independence Outcomes |
| 1110 | Economic Access |
| 1120 | Economic Flexibility, Adaptability, and Security |
| 1130 | Income and Standard of Living |
| 1200 | Economic Resources and Costs |
| 1210 | Economic Costs and Efficiency |
| 1220 | Economic Resources (including employees) |
| 1300 | Economic Production |
| 1310 | Economic Productivity and Production |
| 1320 | Economic Services Provided |
| 1400 | Other Economic Outcomes |
| 2000 | *HUMAN CHARACTERISTIC OUTCOMES* |
| 2100 | Aspirations |
| 2110 | Desires, Aims, and Goals |
| 2120 | Dislikes, Likes, and Interests |
| 2130 | Motivation or Drive Level |
| 2140 | Other Aspirational Outcomes |
| 2200 | Competence and Skills |
| 2210 | Academic Skills |
| 2220 | Citizenship and Family Membership Skills |
| 2230 | Creativity Skills |
| 2240 | Expression and Communication Skills |
| 2250 | Intellectual Skills |
| 2260 | Interpersonal, Leadership, and Organizational Skills |
| 2270 | Occupational and Employability Skills |
| 2280 | Physical and Motor Skills |
| 2290 | Other Skill Outcomes |
| 2300 | Morale, Satisfaction, and Affective Characteristics |
| 2310 | Attitudes and Values |
| 2320 | Beliefs, Commitments, and Philosophy of Life |
| 2330 | Feelings and Emotions |
| 2340 | Mores, Customs, and Standards of Conduct |
| 2350 | Other Affective Outcomes |
| 2400 | Perceptual Characteristics |
| 2410 | Perceptual Awareness and Sensitivity |
| 2420 | Perception of Self |
| 2430 | Perception of Others |
| 2440 | Perception of Things |
| 2450 | Other Perceptual Outcomes |
| 2500 | Personality and Personal Coping Characteristics |
| 2510 | Adventurousness and Initiative |
| 2520 | Autonomy and Independence |
| 2530 | Dependability and Responsibility |
| 2540 | Dogmatic/Open-Minded, Authoritarian/Democratic |
| 2550 | Flexibility and Adaptability |
| 2560 | Habits |
| 2570 | Psychological Functioning |
| 2580 | Tolerance and Persistence |
| 2590 | Other Personality and Personal Coping Outcomes |
| 2600 | Physical and Physiological Characteristics |
| 2610 | Physical Fitness and Traits |
| 2620 | Physiological Health |
| 2630 | Other Physical or Physiological Outcomes |
| 2700 | Status, Recognition, and Certification |
| 2710 | Completion or Achievement Award |
| 2720 | Credit Recognition |
| 2730 | Image, Reputation, or Status |
| 2740 | Licensing and Certification |
| 2750 | Obtaining a Job or Admission to a Follow-up Program |
| 2760 | Power and/or Authority |
| 2770 | Job, School, or Life Success |
| 2780 | Other Status, Recognition, and Certification Outcomes |
| 2800 | Social Activities and Roles |
| 2810 | Adjustment to Retirement |
| 2820 | Affiliations |
| 2830 | Avocational and Social Activities and Roles |
| 2840 | Career and Vocational Activities and Roles |
| 2850 | Citizenship Activities and Roles |
| 2860 | Family Activities and Roles |
| 2870 | Friendships and Relationships |
| 2880 | Other Activity and Role Outcomes |
| 2900 | Other Human Characteristic Outcomes |
| 3000 | *KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOMES* |
| 3100 | General Knowledge and Understanding |
| 3110 | Knowledge and Understanding of General Facts and Terminology |
| 3120 | Knowledge and Understanding of General Processes |
| 3130 | Knowledge and Understanding of General Theory |
| 3140 | Other General Knowledge and Understanding |
| 3200 | Specialized Knowledge and Understanding |
| 3210 | Knowledge and Understanding of Specialized Facts and Terminology |
| 3220 | Knowledge and Understanding of Specialized Processes |
| 3230 | Knowledge and Understanding of Specialized Theory |
| 3240 | Other Specialized Knowledge and Understanding |
| 3300 | Research and Scholarship |
| 3310 | Research and Scholarship Knowledge and Understanding |
| 3320 | Research and Scholarship Products |
| 3400 | Art Forms and Works |
| 3410 | Architecture |
| 3420 | Dance |
| 3430 | Debate and Oratory |
| 3440 | Drama |
| 3450 | Literature and Writing |
| 3460 | Music |
| 3470 | Painting, Drawing, and Photography |
| 3480 | Sculpture |
| 3490 | Other Fine Arts |
| 3500 | Other Knowledge, Technology, and Art Form Outcomes |
| 4000 | *RESOURCE AND SERVICE PROVISION OUTCOMES* |
| 4100 | Provision of Facilities and Events |
| 4110 | Provision of Facilities |
| 4120 | Provision or Sponsorship of Events |
| 4200 | Provision of Direct Services |
| 4210 | Teaching |
| 4220 | Advisory and Analytic Assistance |
| 4230 | Treatment, Care, and Referral Services |
| 4240 | Provision of Other Services |
| 4300 | Other Resource and Service Provision Outcomes |
| 5000 | *OTHER MAINTENANCE AND CHANGE OUTCOMES* |
| 5100 | Aesthetic-Cultural Activities, Traditions, and Conditions |
| 5200 | Organizational Format, Activity, and Operation |
| 5300 | Other Maintenance and Change |

[a]Reprinted from Lenning, Lee, Micek, and Service (1977), page 27. The fourth-level Categories, into which any of the categories listed here can be divided, are "maintenance" (a fourth digit of "1") and "change" (a fourth digit of "2").

Figure 3

ONE POSSIBLE SET OF STUDENT OUTCOME CATEGORIES FOR THE TIME DIMENSION[a]

| 10. Short-Duration Outcomes | |
|---|---|
| 11. Short-duration outcomes appearing at or prior to graduation | 12. Short-duration outcomes appearing after graduation |

| 20. Long-Duration Outcomes | |
|---|---|
| 21. Long-duration outcomes appearing at or prior to graduation | 22. Long-duration outcomes appearing after graduation |

[a]Reprinted from Lenning, Lee, Micek, and Service (1977), page 29.

Figure 4

TAXONOMY OF TIMES TO CONSIDER FOR COLLECTING UNDERGRADUATE STUDENT OUTCOMES DATA USING SURVEY QUESTIONNAIRES[a]

100 Data from Lower Division Students

110 Data from Freshmen Students

111 Data collected Prior to Fall Registration
112 Data collected One Month Following the First Day of Classes in the Fall
113 Data collected One Month Prior to First Semester Final Exams
114 Data collected One Month After Spring Semester Classes Begin
115 Data collected One Month Prior to Spring Semester Final Exams
116 Other, For Example, In the Middle of the Summer Term

120 Data From Sophomore Students

121 Data Collected Prior to Fall Registration
122 Data Collected One Month Following the First Day of Classes in the Fall
123 Data Collected One Month Prior to First Semester Final Exams
124 Data Collected One Month After Spring Semester Classes Begin
125 Data Collected One Month Prior to Spring Semester Final Exams
126 Other, For Example, In the Middle of the Summer Term

200 Data From Upper Division Students

210 Data From Junior Students

211 Data collected Prior to Fall Registration
212 Data collected One Month Following the First Day of Classes in the Fall
213 Data collected One Month Prior to First Semester Final Exams
214 Data collected One Month After Spring Semester Classes Begin
215 Data collected One Month Prior to Spring Semester Final Exams
216 Other, For Example, In the Middle of the Summer Term

220 Data From Senior Students

221 Data Collected Prior to Fall Registration
222 Data Collected One Month Following the First Day of Classes in the Fall
223 Data Collected One Month Prior to First Semester Final Exams
224 Data Collected One Month After Spring Semester Classes Begin
225 Data Collected One Month Prior to Spring Semester Final Exams
226 Other, For Example, In the Middle of the Summer Term

300 Data from Alumni

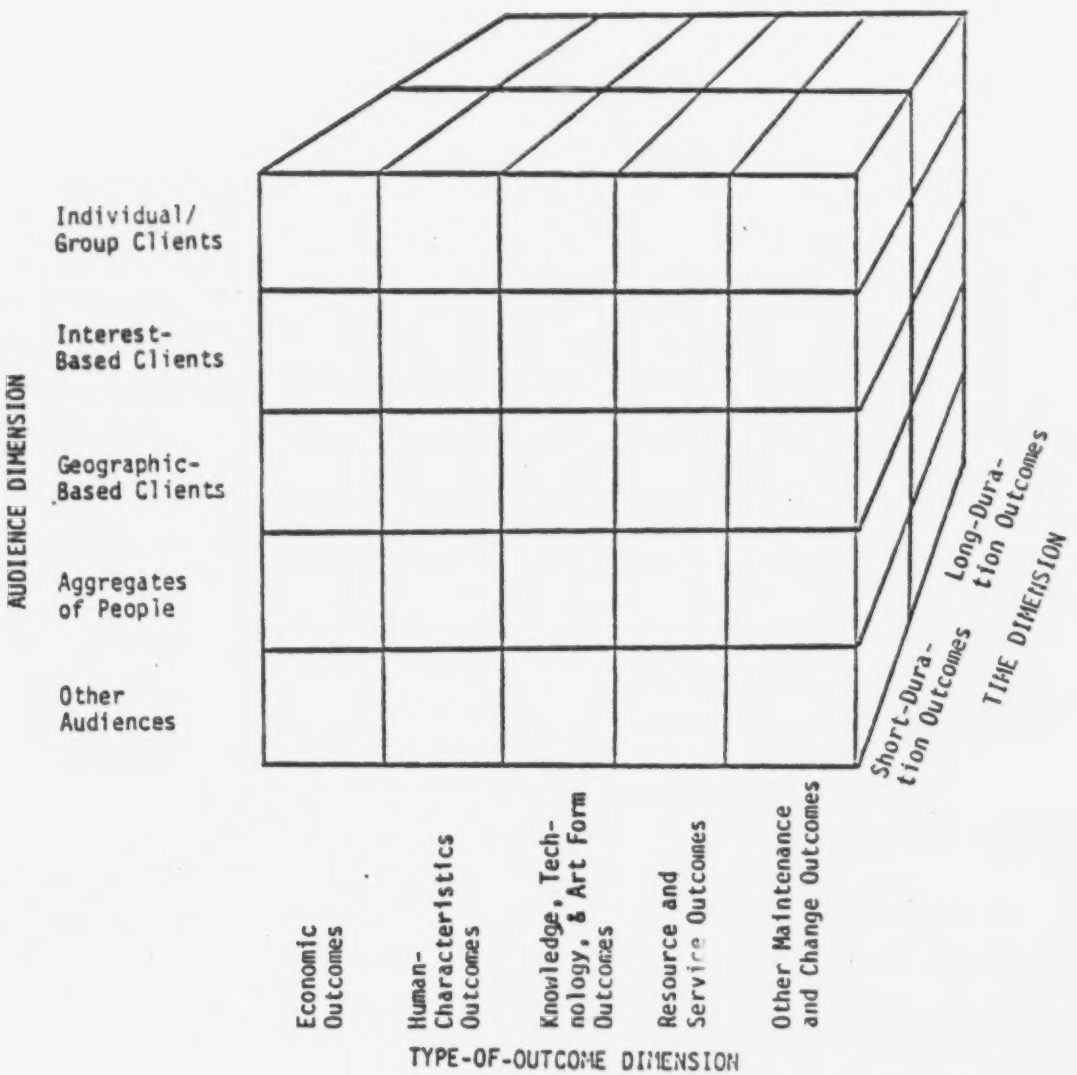
310 Data Collected at Graduation
320 Data Collected One Year After Graduation
330 Data Collected Five Years After Graduation
340 Other, For Example, Data Collected 20 Years After Graduation

400 Other, For Example, Data Collected After Students Have "Dropped Out"

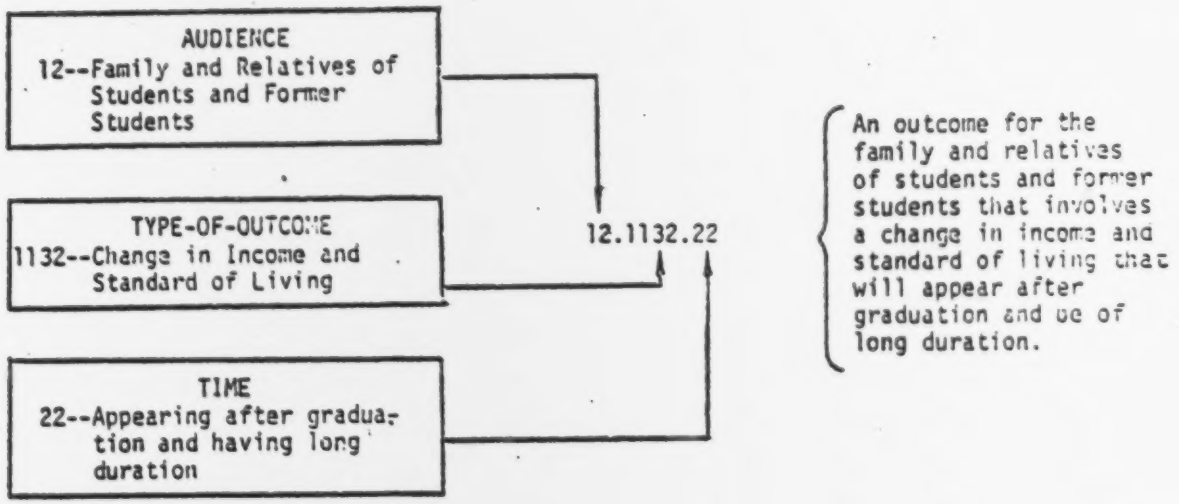
---

[a]Reprinted from Lenning (1977), page 8. These categories and subcategories are based specially on the data collection experiences of staff in the Office of the Vice Chancellor for Academic Affairs at the University of Colorado, Boulder. Therefore, they may not be entirely appropriate for other postsecondary institutions.

When the three dimensions are put together, they can be pictured graphically as a three dimensional series of cubes formed by the categories for one of the dimension intersecting each of the categories of the other two dimensions. This is illustrated below for the broadest categories of each dimension.



It is illustrated at a more detailed outcome category level as follows, using the category code numbers shown in Figures 1-3:


AUDIENCE
12--Family and Relatives of Students and Former Students
TYPE-OF-OUTCOME
1132--Change in Income and Standard of Living
TIME
22--Appearing after graduation and having long duration
12.1132.22
An outcome for the family and relatives of students and former students that involves a change in income and standard of living that will appear after graduation and be of long duration.

When the dimensions are combined at the level of detail illustrated above, they provide several thousand distinct "cells". The categories within the Structure are believed to cover the full range of possible audiences and types of outcomes, and procedures are provided for subdividing to even more detailed subcategories than provided by the Structure. Thus, when all of the outcomes in a list are categorized using the Structure and step-by-step procedures for this purpose, areas of the Structure that have no outcomes assigned to them (or fewer than expected or wanted) become readily apparent. Then, if desired, specific priority outcomes for those areas that seem lacking can be generated using another set of procedures that have been developed. This, in summary, is the process that was used in this tryout of the Structure.

## THE UNIVERSITY OF COLORADO OUTCOMES LIST AND ITS DEVELOPMENT

The Student Outcomes Planning Model[1] helped guide the development of the outcomes list used by the University of Colorado at Boulder. This model is based on the notion that information about students is useful in determining educational policy and improving curriculum. The Model allows for the study of various student subpopulations and their differential outcomes. It represents an exploratory investigation into types of relationships between certain student characteristics and outcomes variables. The Model evolved at the institution in 1975 to assist internal manangement, to provide information for external accountability, and academic planning. Academic planning includes needs assessment, program development, evaluation, and resource allocation (budgeting).

The Model allows for the systematic collection of student data through the use of surveys. The Model facilitates the coordination of basic student-related questionnaires and incorporates the results into a larger, more extensive academic planning model (Meyerson and Banfield, 1955). Other important items of outcomes information which are available through institutional records (for example, college entrance exam scores and undergraduate grade point average) are <u>not</u> included. The Model is designed to identify those items that must be collected directly from students.

The Student Outcomes Planning Model includes students' background, attitudes, values, aspirations, abilities, and the extent of change in these variables. The Model, shown in Figure 5, consists of four basic questionnaires: 1) Freshman Questionnaire, 2) Exiting Students' Survey, 3) Graduating Students' Questionnaire, and 4) Alumni Survey. The Model allows for longitudinal (cohort) and cross-sectional analysis.

---

[1] Developed by Richard L. Harpel and Jean J. Endo

Figure 5

STUDENT OUTCOMES PLANNING MODEL

FOR

THE UNIVERSITY OF COLORADO--BOULDER

## FRESHMEN

**DEMOGRAPHIC CHARACTERISTICS**

Academic ability
Financial support

**PREVIOUS EDUCATIONAL EXPERIENCES**

**ASPIRATIONS/EXPECTATIONS/ MOTIVATIONS**

Reasons for choosing CU
Highest degree planned
Career plans

**SELF EVALUATION**

Academic
Social

**CRITICAL THINKING ORIENTATION**

**GOALS/VALUES**

## EXITING STUDENTS

**TIME OF DEPARTURE**

**REASONS FOR LEAVING**

**FINANCIAL SUPPORT**

**EVALUATION OF UNIVERSITY ENVIRONMENT**

Academic
Social

**UNMET NEEDS**

**FUTURE PLANS**

## GRADUATING STUDENTS

**ACADEMIC ACHIEVEMENT**

Grade point average
Degree type
Basic academic skills
Critical thinking orientation
Satisfaction with college experience

**CAREER DEVELOPMENT**

Major or field of study
Highest degree planned
Importance of job factors
Satisfaction with college experience

**PERSONAL/SOCIAL DEVELOPMENT**

Interpersonal skills
Personal talents/creativity
Appreciation for culture
Understanding different cultures/ideas

**EVALUATION OF UNIVERSITY ENVIRONMENT**

Academic
Social

## ALUMNI

**OCCUPATIONAL SUCCESS**

Positions held
Skills required
Assessment of skills
Job characteristics
Flexibility in field changes
Satisfaction with job
Satisfaction with college preparation

**FURTHER ACADEMIC EXPERIENCES**

Graduate School
Continuing education
Military occupational training

**COMMUNITY ACTIVITY**

Clubs/organizations

**POLITICAL PARTICIPATION**

Elections
National events/ local activities

**CULTURAL INTEREST**

Level of participation
Breadth of interest

Longitudinal studies involve testing the same students (cohorts) several times in their college career. Questionnaires are given to students as freshmen, exiting students, graduating students, and alumni. The testing of cohorts controls for many external variables such as family background and basic ability. Unfortunately, much needed and useful data is not produced early in the process.

Cross-sectional studies provide responses from a sample of students representative of those in the longitudinal cohorts. Cross-sectional studies are performed on exiting students, graduating students, and alumni.

The Model is currently in its third year of testing--incorporating both the longitudinal and cross-sectional surveys to determine response differences. It is hoped that within two years the University will be able to minimize the length of the surveys and use only those instruments needed to provide student data necessary for efficient planning and management of campus programs.

The Student Outcomes Planning Model centers around 22 student related goals and their measures which are listed in the Freshman Questionnaire. The relative importance of each goal reflects students' expectations while attending the University. Student interests are an important component of educational planning. Administrators can balance the needs of various student populations and the different preferences of various educational experts. Several measurable objectives from the Higher Education Measures and Evaluation KIT (C. Robert Pace, 1975) were assigned to each goal. For example, the goal "to gain self-confidence" is measured by responses to the following statements: a) "I am a person of worth and on an equal plane with others", b) "My confidence in myself is strong enough so that it doesn't bother me if people don't like me", c) "I seem to have inner strength in handling things".

In addition to the Pace and Associates KIT, a number of other sources in the literature were referred to in devloping the Model[2] and its associated questionnaires. To date, the Boulder Campus has completed a 1975 Freshman Questionnaire and a 1977 Freshman Questionnaire and is currently developing an Exiting Students' Survey to be completed in 1978. The freshman surveys will be administered every two years to provide descriptive information and establish trends. Trends in measures of objectives are useful in determining whether an outcome is in the desired direction. The exiting survey will compare students who have temporarily or permanently left the institution with those who have remained. It will identify the stopouts, transferouts, and dropouts. It will determine why students leave the campus, the time they left, amount of financial support received, and what their future plans will be.

The Graduating Students' Survey will be administered in 1979. It will include questions that attempt to measure academic achievement, career development, personal/social development, and an evaluation of the University's environment. One year later, the alumni survey will measure occupational success, further academic experiences, community activities, political participation, and cultural interests.

## PROCEDURE USED BY THE UNIVERSITY IN THE CLASSIFICATION OF THE ITEMS ON ITS OUTCOMES LIST

The University of Colorado outcomes list was derived in part from the Student Outcomes Planning Model, and in part from other sources. Although the primary focus of the list is on student outcomes, a few outcomes for other audiences are also included, that are not student outcomes but might

[2]Additional sources used in developing the Model were Schalman, et al. (1974), Baird (1967), Baldridge (1971), Bloom (1956), Clapp (1946), Cohen and and March (1974), Fox (1974), Peterson (1973), Richman and Farmer (1974), Trivette (1973), Meyerson and Banfield (1955), and Micek and Arney (1974).

be expected to relate to student outcomes, for example, number of publications by faculty, number of books in the library, and number of events and type sponsored by the departments or universities.

Two of the basic processes developed by the NCHEMS staff for using the Structure were involved in this study. Systematic, straight forward, step-by-step procedures for each of the processes are provided in Lenning (1977). First, process No. 2--classifying outcomes items--was used, to classify all items in the University of Colorado outcomes list. Then Process No. 1 was applied in order to evaluate the adequacy of the list, in terms of whether important outcomes desired by the University community have been left out.

## PROCESS NO. 2--CLASSIFYING THE OUTCOMES ON THE LIST

The desired "audience" for classification was determined to be current and graduating students (Code No. 11). First, each outcome on the University of Colorado list was classified in terms of the broadest type-of-outcome categories. Then each was grouped into the more detailed categories at the second and third levels of detail for that dimension of the Structure. Procedures are provided for adding additional levels of detail, using available taxonomies that go into still more detail, for example, Bloom's (1956) taxonomy of the cognitive domain, or using a logical array developed locally. At this University it decided that the third-level Structure categories were adequate for their academic planning purposes.

Table 1 shows the University of Colorado's listing of outcome items (right half of each page) and the Structure categories that each was classified into (left half of each page). It was noticed that a number of Structure categories did not have outcomes list items assigned to them. It was felt that there might be additional outcomes categories to which some outcomes from the list had been assigned so Process No. 1 Procedures followed.

Table 1

THE OUTCOMES LIST ITEMS PLUS THE
STRUCTURE CATEGORY INTO WHICH EACH WAS PLACED

"AUDIENCE"--SENIOR STUDENTS AT CU

| NCHEMS Category Code Number | NCHEMS Type-of-Outcome Category Name | Items Included on the University of Colorado Outcomes List |
|---|---|---|
| | **ECONOMIC OUTCOME (Code 1000) CATEGORIES** | |
| 1130 | Income and Standard of Living | - Family income |
| | **HUMAN CHARACTERISTIC (Code 2000) CATEGORIES** | |
| 2110 | Desires, Aims, Goals | - Change in students' goals, desires, aspirations as a result of college |
| 2210 | Academic Skills | - Grades earned by students |
| | | - Persistence in college |
| | | - Self report of ability in math, writing, reading and comprehension |
| 2230 | Creativity Skills | - Changes in test score that measure originality and creative ability |
| | | - Self-report of development and activity |
| 2250 | Intellectual Skills | - Change in students' ability to analyze or solve problems |
| | | - Measure critical thinking activity by developing an "index score" |
| 2270 | Occupational Skills | - Demonstrated ability to perform specific tasks |
| | | - Self-report of occupational skills |
| 2310 | Attitudes, Values | - Effect of college on attitudes and values |
| 2420 | Perception of Self | - Self-confidence measure |
| | | - Expectations |
| 2620 | Autonomy and Independence | - Measures of independence |
| 2680 | Tolerance and Persistence | - Measures of tolerance and persistence |
| 2710 | Completion or Achievement Award | - Graduation diploma |
| | | - Special awards |
| 2740 | Licensing and Certification | - Percent passed specific licensing exams |

Table 1 (continued)

HUMAN CHARACTERISTIC CATEGORIES (continued)

| | | |
|---|---|---|
| 2750 | Obtaining a Job or Admission to a Follow-up Program | - Percent who received jobs<br>- Percent who were accepted to graduate programs |
| 2840 | Career and Vocational Roles | - Self-report |

KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOME (Code 3000) CATEGORIES

| | | |
|---|---|---|
| 3110 | Knowledge and Understanding of General Facts and Terminology | - CLEP exam score<br>- Graduate Record Exam score<br>- Self-report |
| 3120 | Knowledge and Understanding of General Processes | - Comprehension of general processes and methods<br>- Student grades in a general survey course |
| 3210 | Knowledge and Understanding of Specialized Facts and Terminology | - Scores on tests that measur knowledge in specific fields |
| 3220 | Knowledge and Understanding of Specialized Processes | - Scores on tests that measure knowledge in specifi fields |
| 3310 | Research and Scholarship Knowledge and Understanding | - Number of publications by students<br>- Number of publications by faculty |
| 3400 | Art Forms and Works | - Specific accomplishments in the arts by discipline or department |

RESOURCE AND SERVICE PROVISION OUTCOME (Code 4000) CATEGORIES

| | | |
|---|---|---|
| 4110 | Provision of Facilities | - Number of books in library<br>- Number of courts in the Recreation Center<br>- Number and type of computer<br>- Number of keypunch machines |
| 4120 | Provision or Sponsorship of Events | - Number of events and type sponsored by departments or university |
| 4210 | Teaching | - Handbook on evaluations of specific instructors |
| 4220 | Advisory and Analytic Assistance | - Number of advisors available to students<br>- Technical assistance available to students |
| 4230 | Treatment, Care, and Referral Services | - Student health center<br>- Mental health facility<br>- Personal counseling |

PROCESS NO. 1--DEVELOPING OUTCOMES LISTS

Process 1 was used to develop a list of important outcomes irrespective of the current list. Such a list will vary depending upon the values of the planning group making the decision: for example, faculty, students, administrators, legislators. However, an overall institution-wide approach was taken.

The "audience" focus was limited to "current students" in order to limit the scope of Process 1. The five major categories of the type-of-outcome dimension were outlined on a sheet of paper that was titled "audience--currently enrolled students". Then, under each major category, all subcategories at the second and third levels of detail were considered for importance. The detailed subcategories were then used to stimulate thinking about specific outcomes that could be considered "essential" or "important". Aiding in this process for each subcategory were: (1) A product/event/condition typology, (2) a maintenance/chance typology, (3) an output/impact typology, and (4) and an intended-unintended/valued-not valued typology.

Table 2 presents Structure categories left out of the original University of Colorado listing that were identified during this project as important categories for the University and its students. Also included are the specific priority outcomes that were identified for each category.

Table 2

IMPORTANT STUDENT OUTCOMES ITEMS IDENTIFIED
THAT WERE NOT ON THE ORIGINAL
UNIVERSITY OF COLORADO LIST

| NCHEMS Category Code Number | NCHEMS Type-of-Outcome Category Name | Items to be Added to the University of Colorado Outcomes List |
|---|---|---|
| | **ECONOMIC OUTCOME (Code 1000) CATEGORIES** | |
| 1120 | Economic Flexibility and Independence | - Social Mobility |
| 1130 | Standard of Living | - Family assests (other than income) |
| | **HUMAN CHARACTERISTIC OUTCOME (Code 2000) CATEGORIES** | |
| 2240 | Expression and Communication Skills | - Self-perception of skills in the foreign languages |
| 2260 | Interpersonal, Leadership and Organization Skills | - Self-perception of interpersonal and leadership skills<br>- Positions held in organizations that require leadership |
| 2630 | Dependability and Responsibility | - Self-perception of dependability and responsibility<br>- Employer's opinion |
| 2650 | Flexibility and Adaptability | - Self-perception of adaptability (other than in job changes) |
| | **KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOME (Code 3000) CATEGORIES** | |
| 1330 | Knowledge and Understanding of General Theory | - Score on tests measuring comprehension of general theories |
| 3230 | Knowledge and Understanding of Specialized Theory | - Scores on tests measuring theoretical knowledge in specif fields |

## CONCLUSION

As a result of this tryout of the NCHEMS Outcomes Structure, some important outcomes information were discovered to have been omitted in the original list. The Structure served as a reminder of the breadth of outcome items associated with each outcome category. For example, the category "Competence and Skills" indicated that Expression and Communication Skills such as skills in the foreign languages were important indicators of entering students' ability. Basic speaking, writing, and reading skills in the English language were considered to be the primary indicators in the orginal outcomes list. As a result, the list and the Freshman Questionnaire were modified.

The final distribution code numbers indicated that the Boulder Campus outcomes list is predominately comprised of human characteristics. This is because the variables in the Model are primarily "student-oriented" outcomes.

In addition, the classification of unique "audiences" will be valuable to the Boulder Campus as the outcomes information is incorporated into reports. A public relations staff can categorize outcomes items that would be useful to particular audiences. For example, research projects completed by graduate students may be of interest to the following audiences: 1) current students, 2) public school districts, 3) industry and business, 4) citizens and policy-makers of Colorado. Short executive summaries written for particular audiences can be developed which communicates this information.

The organization which results from the classification into "type of outcome" can help campus leaders and representatives report the outcomes of educational programs more effectively. Information can be stored in computerized student information systems keyed to the NCHEMS classification codes. The classification system can also be used to organize reference materials collected on outcome variables.

## REFERENCES


Baird, L.L., The Educational Goals of College-Bound Youth, ACT Research Report, No. 9. Iowa City, Iowa: The American College Testing Program, 1967.

Baldridge, J.V., Power and Conflict in the University. New York: Wiley, 1971.

Bloom, B.S., Taxonomy of Educational Objectives and Cognitive Domain. New York: David McKay, 1956.

Clapp, P.S., "The Objectives of the Four-Year Colleges and Universities of the Northwest Association of Secondary and Higher Schools." Higher Commission of the Northwest Association of Secondary and Higher Schools, 1946.

Cohen, M. and March, J., Leadership and Ambiguity: The American College President. New York: McGraw-Hill, 1974.

Fox, Richard, "University of Colorado, Goals for the Boulder Campus." Unpublished Report, University of Colorado, 1974.

Gross, E. and Gambsch, R.V., University Goals and Academic Power, American Council on Education, Washington, D.C., 1968.

Lenning, O.T., The Outcomes Structure: An Overview and Procedures for Applying It in Postsecondary Education Institutions. Boulder, Colorado: National Center for Higher Education Management Systems, 1977.

Lenning, O.T., Lee, Y.S., Micek, S.S., and Service, A.L., A Structure for the Outcomes of Postsecondary Education, Boulder, Colorado: National Center for Higher Education Management Systems, 1977.

Meyerson, M., and Banfield, E., Politics, Planning, and the Public's Interest, New York: Free Press, 1955.

Micek, Sidney S., and Arney, William R., The Higher Education Outcome Measures Identification Study, National Center for Higher Education Management Systems, at WICHE, November, 1974.

Pace, C. Robert, and Associates, Higher Education Measurement and Evaluation KIT. Revised Edition. Los Angeles: Center for the Study of Evaluation, Graduate School of Education, University of California at Los Angeles, 1975.

Peterson, R., Goals for California Higher Education: A Survey of 116 College Communities. Berkeley: Educational Testing Service, 1973.

Richman, Barry M. and Farmer, Richard N., Leadership, Goals, and Power in Higher Education. San Francisco: Jossey-Bass, 1974.

Schalman, Gary S. et. al., Jefferson County Mountain Area Research Project, University of Colorado at Denver, 1974.

Trivett, David A., "Goals for Higher Education: Definitions and Directions," ERIC/Higher Education Research Report, No. 6, Washington, D.C.: American Association for Higher Education, 1973.

# PRELIMINARY TRYOUT OF THE NCHEMS OUTCOMES STRUCTURE AT TWO SETS OF FOUR COLLEGES

Oscar T. Lenning
National Center for Higher Education Management Systems

Edward G. Lundin
Spelman College

In this "age of accountability," institutional researchers and others have become especially concerned about concretely identifying and understanding the impacts of their institution on students and society. After two years of concentrated effort NCHEMS has developed an "outcomes structure," a new system for organizing outcomes and outcome information for purposes of classification, analysis, and decision-making. As conceived, this structure has potential use in helping institutional officials to identify educational needs, develop goals, translate goals into more concrete objectives, evaluate the institution and its programs, raise the awareness of institutional personnel about the need to rethink the outcomes of their institution or program, explore whether or not there are important outcome areas that have been overlooked on campus, communicate about outcomes with concerned publics, etc. It does this through direct application to: (1) defining outcomes, (2) organizing outcome information, (3) generating lists of priority outcomes, (4) classifying outcomes, and (5) information storage and retrieval.

This paper gives an overview of the Structure and reports on a project that attempted, in a preliminary way, to test application of the Structure in small liberal arts colleges. The project was co-sponsored by the Learning Outcomes Task Force of the Council for the Advancement of Small Colleges and NCHEMS. It commenced in the summer of 1976 and was completed in late winter 1977.

---

[1] A paper presented at the Annual Forum of the Association for Institutional Research, Montreal, Quebec, May 1977. Acknowledgement and appreciation is hereby expressed to the colleges participating in this project, to their campus coordinators for the project, and to the members of the CASC Learning Outcomes Task Force for their contribution to this project's success.

## The NCHEMS Outcomes Structure

In the early 1970's NCHEMS staff had developed an Inventory of Higher Education Outcome Variables and Measures (Micek and Wallhaus, 1973) that consisted of organized lists of outcomes prominent in higher education, along with definitions and outcome measures or indicators for each. This inventory was used at a number of colleges and universities in goal setting and goal translation efforts, and found to be quite helpful. Concerns were expressed, however, that it was not comprehensive enough--that it left out outcomes that are important to some people in higher education. Furthermore, it was felt by many that the instrument should focus on the whole of post-secondary education, not just on higher education. Therefore, an effort was begun at NCHEMS in 1974 to develop a comprehensive structure for the outcomes of postsecondary education.

Before trying to develop the Structure itself, it was felt that agreement should be reached on "just what is an educational outcome?" Various people seemed to view outcomes in quite different ways, so it was felt that one definition of "outcome" might not be enough for the Structure--the definition might have to be adjusted for different contexts in which the Structure would be used. Therefore, an extensive search of the literature was conducted to try to arrive at a concept for educational outcomes upon which different people could agree, and that would be especially appropriate for planning, management, and policy development purposes. Concurrent with this, other comprehensive reviews of the literature were conducted to derive the following: all previous attempts to structure educational outcomes and outcome-related concepts such as goals and objectives that are outlined in the literature, all specific and general outcomes of postsecondary education that are specifically claimed in various portions of the literature to be worthy of

concern, which could be used to test the content coverage of the structure to be developed; and all principles or criteria that could be found in the literature of the field of taxonomy.

The concept of educational outcome that was derived to undergird the outcomes structure to be developed (and which is thus a part of the structure) and the principles or criteria for developing and testing out the structure that came from the taxonomic literature are discussed in depth by Lenning, Lee, Micek, and Service (in press). A document discussing the more than 80 previous outcomes classification attempts found in the literature (Lenning, in press) and a paper that lists all the various outcomes found to be emphasized anywhere in the literature (Lenning, 1976) are also available from NCHEMS.

The Concept of an "Educational Outcome"

During the initial phase of developing the NCHEMS Outcomes Structure, a general concept of "educational outcome" was derived which it was felt most people could support no matter what their orientation--whether their concern is primarily with efficiency or whether it is primarily with effectiveness. Six general attributes (or characteristics) of an educational outcome were formulated along with five other factors that are important for understanding what a particular educational outcome is all about. For an in-depth discussion of each attribute and factor, see Lenning, Lee, Micek, and Service (in press).

The attributes of an "Educational Outcome". The six attributes of educational outcomes have been titled: form, change status, focus, neutrality, measurability, and output/impact. Each is briefly described below.

1. FORM - This attribute of an outcome refers to the makeup or substance of the outcome, that is, the forms in which particular direct outcomes of postsecondary education, or consequences associated with those direct outcomes, are (or are intended to be) observed and/or measured. The three classes of "form" are defined as follows:

Product--tangible, concrete entities that endure, for example, a program completer, a degree, a job, or a book.

Event--observable, tangible transactions or sets of behaviors that do not endure with time, such as a seminar, a concert, a graduation exercise, and being listed in Who's Who.

Condition--intangible but real circumstances, such as morale, satisfaction, an attitude or belief, an appreciation, social equity, and achievement.

2. CHANGE STATUS - This attribute was suggested by the extensive work of Derr (1973), who developed a taxonomy of the "social function" of education that had such a concept as its foundation. Two basic change states are possible:

Maintenance--outcomes that result in keeping the status quo; in stabilization, or in reproduction and preservation--for example, helping a student to keep basic academic skills from becoming "rusty" or continuing traditions into the next generation.

Change--Outcomes that result in alteration of the status quo; in modification, revision (improvement or otherwise), or replacement.

3. FOCUS - Webster's definition of "focus" is "a point to which something converges," and this attribute converges on the basic, specific "what" that is maintained or changed to constitute the outcome of concern. (Another appropriate name for this attribute would have been "aspect," as used by the Swedish LIGRU taxonomy of educational objectives [Klingberg, 1970].) To illustrate, instruction can involve maintenance or change on such entities as knowledge and understanding, skills and competencies, attitudes and values, appreciations, habits, roles, reputation, GNP, certification and licensure, jobs, income, family relations, social conditions, etc.

4. NEUTRALITY - The generic concept of "educational outcome" is a neutral one separated from any inherent value status. It is important that postsecondary education planners and managers not let values cause them to ignore important negative or unexpected outcomes in their planning and assessment.

5. MEASURABILITY - This attribute refers to the extent and ease with which a particular outcome or type of outcome can be quantified. Knowledge about measurability has important implications for outcomes identification, analysis, and interpretation.

6. OUTPUT/IMPACT - "Output" has often been used as though synonymous or combined with the term "impact," and such a failure to make a distinction between these two important concepts reduces the ability to identify, organize, and analyze outcomes. Distinctions formulated for these two terms are:

Outcomes--the direct end products, events, or conditions that result from the application of the institutional or program processes to transform the various inputs. Examples for institutions are achievement levels, specialization of knowledge, degrees, program completers, publications, and cultural events.

Impacts--the consequences of outputs and earlier impacts for particular individuals, communities, or things. They are the indirect end products of institutional, program, or other activities and processes. Examples of possible (not assured) impacts for institutions include a program completer's increased ability to obtain and hold a job, the security and income or prestige that job gives the person, the increased gross national product that results from increased income of individuals, the increased standard of living and quality of life in society which may be associated with increased gross national product, and so forth.

Other Factors Important in Understanding Particular Educational Outcomes.

Although they do not describe the essence of an educational outcome, like the six attributes do, other factors are just as important in understanding the outcome, applying outcomes information to planning, management, and evaluation:

PRODUCER/FACILITATOR - Activities, methods, processes, programs, etc. that cause or influence the outcome to happen, or the conditions that allow it to happen.

AUDIENCE - The persons, groups, organizations, communities, and other entities that receive or are affected by the educational outcome(s) of concern. Not delineating this factor often presents one of the major difficulties in identifying and understanding educational outcomes.

INTENDED/UNINTENDED - Unexpressed as well as expressed motives for different groups desiring particular outcomes are important to consider in planning and management. The potential for unintended outcomes (both those viewed as positive and those viewed as negative) should also be considered in planning.

FUNCTIONAL AREA - The function(s) that particular outcomes can or do serve.

TIME - The point in time when the outcome occurs and how long the outcome lasts.

A Description of the NCHEMS Outcomes Structure

The NCHEMS Outcomes Structure has three formal dimensions, where an outcome dimension is a continuum that can be divided into segments along which outcomes can be placed and viewed in relation to one another. These three dimensions are: (1) Audience--the persons, groups, or entities that receive and/or are affected by (or that are intended to receive or be affected by) the outcome of concern, (2) Type-of-Outcome--whether or not the outcome involves a change in status (maintenance versus change) and the basic, specific entity that is maintained or changed, and (3) Time--the time frame in which the outcome occurs or is intended or expected to occur.

The categories and subcategories (along with their associated code number) of the audience dimension are presented in Appendix A. For some purposes at the institutional, system, state, or federal level, the amount of detail shown at the lowest level in Appendix A will be sufficient. For many purposes, however, (and especially within the institution), additional levels of detail are needed. Helpful procedures for adding additional levels of detail to the dimension, for different purposes, are provided--such a process is called 'extending the structure.'

The categories and subcategories developed for the type-of-outcome dimension are presented in Appendix B. Standard definitions along with example outcome measures and indicators are also available to the user of the Structure for each detailed category. (Work on expanding the lists of measures for various categories, and on synthesizing the empirical studies in the literature that relate to those categories, is currently underway at NCHEMS.) As with the audience dimension, certain applications of the Structure will call for additional levels of detail on the type-of-outcome dimension--for example, if it is applied to curricular development and planning for courses.

It is intended that those dimensions and categories not of serious concern to a particular user of the Structure be ignored, or modified and adapted in a way that will better meet local needs and situations. The same is true of the various proposed procedures for using the Structure that are presented in a document especially prepared for institutional practitioners (Lenning, in press). Planners and managers at the system, state, or federal level should also be able to make use of the procedures and techniques outlined in this manual. Only some of the application procedures have been tested, and those in a preliminary manner, but the results thus far are positive. For example, the University of Colorado has developed, over a period of years, lists of student outcomes that their staff felt confident were comprehensive for their institution. The person who coordinated the development of those lists was hired by NCHEMS to apply the Structure to the lists, using the appropriate procedures in the draft users manual, to see if there were any "holes." To her surprise, several of wnat they considered to be very important outcome categories had been left off of their lists. As a result, they are revising their lists accordingly, which in turn will result in some modifications in their freshman student survey form.

Only time and widespread use in a variety of different institutional and other settings will tell whether the supposed potential of the Structure will really "bear fruit." Such use will also probably suggest modifications for future versions of the Structure, and adaptations in procedures that need to be made for different types of users and for different types of institutions.

## Trying Out the Outcomes Structure

Two approaches to outcomes identification and validation, each using the NCHEMS Outcomes Structure in a different context, were attempted in the joint NCHEMS/CASC effort. The "NCHEMS approach" emphasized identification and

preferential weighting of outcomes, ordered according to "essential," "important," and "less than important" outcomes. This weighting then led to questions of institutional administrators, departmental chairpersons, faculty members, and students about assessment and evidence issues. Finally, the discussion moved toward the identification of student activities and experiences which would lead to, percipitate or culminate in the achievement of the outcomes. (A major refinement of this approach that used only the most global categories of the Structure was implemented into the planning cycle at one of the participating colleges; and was found to be quite helpful for evaluating their institutional and program goals.) The "CASC approach," by juxtaposition, was designed to identify and specify learning activities that had three traits:

(1) the activity was of a publicly demonstrable nature;

(2) the institution could exercise some control over the development and expression of the activity; and

(3) the activity was expressed within a time frame related to the acquisition of skill or the attainment of an outcome.

Once the activity was specified, the instrument elicited responses which satisfied the criteria question and identified the outcomes sought through participation in the activity.

Before commenting on the relative merits of, and reactions to, the approaches, we would like to address the problems or needs which suggested these approaches. The problems are the global nature of mission/goals statements, the translation of goals to operational objectives, and the need for determining a connection between what happens on campus and the raison d'etre of the institution. Outcomes identification is an attempt to hypothesize and realize causal linkage between what a campus expostulates as its mission and those changed behaviors which the college can be held accountable for. Our task force perceived a void between the all-embracing goal statements found in college catalogs and the methods of assessing student achievement--most notable of which are paper and

pencil exercises. Hence, the pivotal issue which our task force raised with faculty members is illustrated by questions such as, "How do you determine if a student's critical thinking capability has been enhanced as a result of knowing the content of your course?" At the departmental and college-wide levels, similar discussion took place to determine the activities which were perceived to bring about the attainment of intended outcomes.

The Central Metaphor

As we were participating in the case exercise at one of the colleges, a faculty member raised an objection to the metaphor which encompassed our proceedings. His objection was aimed at the metaphor of a microscope, which attempted to isolate and identify rich and diverse activities of an educational program. This remark is also reminiscent of Kenneth Boulding's statement that measurement of teaching effectiveness is essentially "measurement of rapport." Furthermore, a faculty member at another institution objected to a mentality which did not value the spontaneous, creative, and personal interaction between faculty and students which cannot be predetermined or assessed. Our approaches--both CASC and NCHEMS--have been sensitive to these concerns and have attempted to integrate the greatest amount of latitude in areas of activity statements, evidence of achievement, and intended outcomes. While the teaching enterprise is personal, spontaneous, creative, and idiosyncratic, it is also intentional intellectual activity. Our approach has been to document what is intentional and to recognize our limitations regarding the spontaneous energies released in the educational setting.

In addition to the metaphor of the microscope is the larger question of whether colleges can be held accountable for attaining student learning outcomes. At issue are the dynamics of governance, pedagogical intervention and value added learning. Governance issues emerge around the question of goal setting and institutional accountability. In other words, must a Xanadu College

graduate exhibit attainment of specified outcomes? Issues of pedagogical intervention emerge around student choice and the rites of passage as specified in the general educational, departmental majors, and college-wide requirements. The retreat from requirements spawned in the '60s is being reassessed toward the chary reinstatement of some common learning experiences. Finally, the issue of value added learning is central to the identification and validation of student learning outcomes. Failing accurate and comprehensive assessment of student capabilities upon entry, colleges cannot expect to take credit for the promulgation of certain student learning outcomes. Moreover, in the absence of input data on student capabilities, the assessment of specific activities which lead to outcomes becomes academic at best.

Results of the "NCHEMS Approach"

Since diversity in intended outcomes was desired, it was decided to invite small colleges to participate that were diverse on geographic distribution, size, institutional control, nature of the student population (residential versus commuter and coeducational versus single sex), curriculum, and planning/management orientation. Other important selection factors were the institutional interest in the project and willingness to participate. Once the institutions were identified, each appointed a campus coordinator for the project. Those representatives traveled to NCHEMS for an orientation and pilot implementation session. Participation in this stage signified the institution's commitment to the process and, also, familiarized the institutional representatives with the background and rationale for outcomes identification and validation. A vital link was established, then, between the outside group and the institution, thereby legitimizing the endeavor.

The campus coordinators organized CASC/NCHEMS visits to their colleges, convening participants and arranging schedules for individual appointments. A workshop was held at the beginning of the proceedings to familiarize campus representatives with

the purpose and procedures for the interaction. Essentially, three activities were scheduled for the workshop:

(1) introduction of CASC and NCHEMS representatives and the outcomes project;

(2) orientation of participants to terminology, definitions and use of materials for outcomes planning at the department level; and

(3) participation in role-playing about the use of outcomes concepts as a basis for allocation of funds at the institution-wide level.

After the role-playing exercise, the CASC representative offered observations and the participants were asked to comment on the exercise and materials provided.

Individuals were interviewed during the next one and one-half days by Lenning of NCHEMS and the CASC representative vising on campus. Interviews followed closely an interview instrument that has been appended to this paper (see Appendix C).[2] Faculty members, students, and administrative personnel were asked to comment on institutional outcomes but, more importantly, to concentrate on student learning outcomes that they desire (or intend/plan to bring about) for students in their program areas.

Priorities that different groups gave to the various Outcome Structure "type-of-outcome" dimension categories at each college are presented in Table 1--because of the small numbers of respondents, percentages could not be used. These data are discussed in depth in Lenning (1977) along with: specific outcomes suggested as especially important for various priority categories, concrete measures and indicators which can provide adequate evidence that the outcomes of concern have occurred, and the student activities and experiences that the various respondents felt would most contribute to bringing about the particular outcomes they had emphasized as being especially important. Although a number of noteworthy variations in patterns for different institutions (and groups within institutions) are noted in Table 1; institutional differences in focus and activities

[2]A survey questionnaire form of this instrument has since been developed and is currently being reviewed.

# TABLE 1

## PRIORITY RATINGS OF OUTCOME CATEGORIES BY THREE CLASSES OF RESPONDENTS[a]

| | ADMINISTRATORS | | | | FACULTY MEMBERS | | | | STUDENTS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | College A (n = 7) | College B (n = 8) | College C (n = 8) | College D (n = 0) | College A (n = 9) | College B (n = 8) | College C (n = 5) | College D (n = 12) | College A (n = 4) | College B (n = 3) | College C (n = 3) | College D (n = 2) |
| **COMPETENCE AND SKILLS** | | | | | | | | | | | | |
| 2210 Academic Skills | 5 4 1 | 6 1 0 | 8 4 0 | | 4 10 1 | 6 2 0 | 5 3 2 | 12 4 1 | 1 1 1 | 0 1 0 | 1 0 0 | 2 2 0 |
| 2220 Citizenship and Family Membership Skills | 5 5 2 | 2 2 2 | 11 0 1 | | 2 8 5 | 1 4 2 | 1 1 2 | 2 2 13 | 1 2 2 | 0 0 3 | 1 3 0 | 0 0 4 |
| 2230 Creativity Skills | 4 2 3 | 1 5 0 | 4 6 2 | | 12 1 0 | 4 4 0 | 5 3 2 | 10 5 2 | 3 1 1 | 2 0 0 | 0 4 0 | 0 3 1 |
| 2240 Expression and Communication Skills | 6 1 | 5 2 0 | 11 1 0 | | 14 1 0 | 7 1 0 | 2 4 1 | 10 6 1 | 5 0 0 | 0 3 0 | 2 2 0 | 1 1 0 |
| 2250 Intellectual Skills | 4 6 | 6 1 0 | 8 2 0 | | 11 4 0 | 7 1 0 | 6 4 0 | 14 3 0 | 3 1 0 | 3 0 0 | 0 4 0 | 3 1 0 |
| 2260 Interpersonal, Leadership, & Org. Skills | 6 2 2 | 3 3 0 | 11 1 0 | | 9 4 2 | 3 2 3 | 2 2 1 | 7 6 8 | 2 2 0 | 0 3 0 | 1 1 0 | 0 1 0 |
| 2270 Occupational Skills[b] | 6 2 2 | 2 4 1 | 3 2 2 | | 6 2 2 | 3 4 1 | 2 4 4 | 4 9 4 | 2 2 1 | 3 0 0 | 2 2 0 | 0 2 2 |
| 2280 Physical and Motor Skills | 3 4 1 | 0 3 3 | 4 2 1 | | 4 6 5 | 1 2 5 | 1 2 2 | 0 1 16 | 0 3 2 | 3 0 0 | 0 1 3 | 0 0 1 |
| **KNOWLEDGE AND UNDERSTANDING** | | | | | | | | | | | | |
| 1160 General Knowledge and Understanding | 10 0 0 | 5 2 0 | 11 1 0 | | 15 0 0 | 5 3 0 | 6 4 0 | 12 5 0 | 2 3 0 | 0 3 0 | 3 1 0 | 2 2 0 |
| 1460 Specialized Knowledge and Understanding | 6 3 1 | 5 0 2 | 6 2 1 | | 11 2 0 | 6 2 0 | 6 2 2 | 11 5 1 | 3 0 0 | 0 3 0 | 3 1 0 | 1 1 0 |
| **OTHER LEARNING OUTCOMES** | | | | | | | | | | | | |
| 2110 Desires, Aims, and Goals | 6 0 2 | 3 3 1 | 10 2 0 | | 7 8 0 | 5 3 0 | 1 9 0 | 16 8 | 4 1 0 | 2 1 0 | 1 3 0 | 1 1 0 |
| 2120 Desires, Likes and Interests | 4 3 1 | 2 5 2 | 3 5 0 | | 5 7 3 | 2 3 3 | 1 1 2 | 2 7 8 | 2 1 0 | 2 0 0 | 0 4 0 | 0 2 2 |
| 2130 Motivation or Drive Level | 6 0 2 | 3 3 0 | 7 4 1 | | 10 2 1 | 6 2 0 | 1 6 3 | 9 6 2 | 2 0 0 | 0 1 0 | 1 1 0 | 2 0 0 |
| 2140 Attitudes and Values | 6 1 1 | 5 2 0 | 9 3 0 | | 14 1 0 | 4 4 0 | 2 3 0 | 3 8 6 | 4 1 0 | 0 1 0 | 1 1 0 | 1 0 0 |
| 2150 Goals, Commitment, Philosophy of Life | 4 3 1 | 4 2 1 | 9 1 0 | | 10 5 0 | 4 3 1 | 1 2 1 | 2 5 10 | 2 2 1 | 0 1 0 | 3 1 0 | 2 1 1 |
| 2160 Feelings/Emotions, eg., appre. & satis. | 4 2 3 | 3 4 0 | 5 5 0 | | 11 2 2 | 1 5 2 | 1 4 0 | 7 5 5 | 2 3 0 | 1 0 0 | 2 1 0 | 0 1 1 |
| 2170 Perceptual Awareness and Perceptions | 6 1 1 | 4 3 0 | 8 4 0 | | 13 2 0 | 4 2 2 | 6 4 0 | 8 3 6 | 4 1 0 | 2 0 0 | 2 1 0 | 2 1 0 |
| 2180 Physical Fitness and Traits | 3 3 2 | 2 2 3 | 2 10 0 | | 3 3 9 | 0 4 4 | 0 2 3 | 0 2 15 | 0 2 2 | 2 1 0 | 0 3 1 | 0 0 4 |
| 2190 Physiological Health | 5 0 2 | 2 3 2 | 2 10 0 | | 3 6 6 | 0 4 4 | 0 1 9 | 1 1 15 | 1 1 1 | 1 0 0 | 1 3 0 | 0 1 3 |
| 2195 Psychological Adjustment Factors[c] | 5 2 1 | 1 5 0 | 6 6 0 | | 6 4 0 | 1 3 3 | 1 2 2 | 4 2 8 | 1 1 1 | 0 1 0 | 1 0 0 | 1 1 0 |
| 2210 Adventurousness and Initiative | | 1 1 | 1 0 | | 3 0 | 0 1 | | 1 5 | 1 0 | 0 2 | 0 1 | 2 0 |
| 2220 Autonomy and Independence | | 1 0 | 1 0 | | 2 1 | 0 1 | | 1 2 | 1 0 | 1 0 | 1 0 | 2 0 |
| 2230 Dependability and Responsibility | | | | | 2 1 | | | 1 1 | 1 0 | 0 2 | 2 0 | 2 1 |
| 2240 Dogmatism and Authoritarianism | | 2 0 | | | 1 1 | 0 1 | | 2 0 | 0 1 | 2 0 | | |
| 2250 Flexibility and Adaptability | | | | | 2 2 | 0 1 | | 1 2 | 1 0 | 1 1 | 2 0 | 2 0 |
| 2260 Habits | | | | | 0 2 | | | 1 0 | 0 1 | 1 1 | | |
| 2270 Psychological Functioning | | 1 0 | 1 0 | | 1 2 | 0 1 | | 0 2 | 1 0 | 1 1 | | |
| 2280 Tolerance and Persistence | | 0 1 | | | 2 1 | | | 1 1 | 1 0 | 0 2 | 2 0 | 2 0 |

ADDITIONAL CATEGORIES THAT WERE STRESSED BY SOME PEOPLE (the numbers of people rating it "essential" and "important" are provided in parentheses): 1100 Economic Access and Independence Outcomes (0, 4), 1200 Economic Resources and Costs (1, 3), 1300 Economic Production (1, 0), 1900 Other Economic Outcomes (0, 3), 2140 Mores, Customs and Standards of Conduct (1, 0), 2701 Status Recognition and Certification (0, 2), 2710 Completion or Achievement Award (1, 1), 2720 Credit Recognition (1, 3), 2730 Image, Reputation or Status (1, 1), 2740 Licensing and Certification (2, 1), 2750 Obtaining a Job or Admission to a Follow-Up Program (4, 2), 2760 Power and/or Authority (0, 2); 2900 Social Roles (0, 3); 2910 Affiliations (1, 0), 2830 Avocational and Social Roles (1, 3), 2940 Career and Vocational Roles (2, 4); 2850 Citizenship Roles (3, 1), 2860 Family Roles (0, 1); 2670 Friendships and Relationships (1, 1), 3300 Research and Scholarship (1, 1), 3310 Research and Scholarship Knowledge and Understanding (4, 1); 3320 Research and Scholarship Products (2, 1); 3400 Art Forms and Works (5, 5); 2290 Coping Skills (1, 0), 2630 Openness (1, 0); 2670 Self Reliance (1, 0); 2630 Sense of Responsibility for Self and Others (1, 0), 2830 Social Awareness and Involvement (1, 0); 2770 Success in Graduate School (1, 0).

[a]For each set of numbers, the digits before the first period indicate the number of respondents rating that outcome category "essential," the digits between the two periods indicate the number of respondents choosing it "important," and the digits after the second period indicated the number of respondents rating it less than important. Some respondents indicated ratings for two or three different types of students.

[b]Because of interview feedback, this category has now been changed to "occupational and employability skills."

[c]Because of interview feedback this category has now been changed to "personality and personal coping characteristics," and its code number has been changed to 2500 so that the categories at this level remain in alphabetical order.

NOTE: Reproduced from Lenning (1977).







BEST COPY AVAILABLE

really seemed to stand out when the emphasis shifted to a more specific, concrete level.

As a result of the workshop and interview activities, the following observations may be made:

(1) concept of student learning outcomes is new (and to a degree suspect) on college campuses;

(2) role-playing the use of outcomes in the resource allocation process can facilitate interaction and communications;

(3) it is extremely difficult for most faculty to decide on outcome priorities, and to go from detailed outcome categories to specific, concrete outcomes, but they can do so successfully with the help of procedures like those delineated in this approach; and

(4) faculties resist the delimitations of outcomes methodology.

The long term impact of the exercise is difficult to gauge, although the residual effect, as judged by informal comments, has been positive. For example, many of the faculty members outside of education exclaimed that they had never tried to think about what they were trying to accomplish in this way before, and they seemed stimulated.

Results of the "CASC Approach"

The "CASC approach" to campus selection, preparation of representatives and orientations differed markedly from the "NCHEMS approach." While selection criteria for institution participation were similar, greater attention was given to minimizing the cost of project implementation. Because of limitations of professional staff and money, task force members prepared explanation materials which covered the concepts, rationale and processes of the task force. Included in the packet sent to respondents (potential interviewees) were the following papers:

(1) overview of the activities--outcomes concept and linkage;

(2) introduction to the objectives of the project;

(3) description of procedures for project implementation;

(4) an "advanced organizer" which briefly described the above three items;

(5) selected outcomes from the NCHEMS outcomes structure;

(6) the interview instrument (see Appendix D).

Two brief reactions are appropriate of this point: first, too much material was sent to respondents; second, too little material was read by respondents. This latter condition necessitated a brief orientation session during most interviews.

Once the campuses expressed agreement to participate, explanatory materials were sent to each campus representative--who then distributed the materials to campus administrators, faculty, and students. CASC representatives (in pairs) interviewed on campus at one hour intervals, using the interview instrument included in Appendix D. Some of the responses to the concepts and problems were admittedly negative; whether this resulted from ignorance of the material or a thoughtful disdain is difficult to say. Other responses were very positive, as if the concepts of activities-outcomes linkage provided a means of expressing educational practices in a more forthright manner. Overall, it is difficult to say whether the colleges benefited from the interview experience. Some of the factors which mitigated against the implementation were:

(1) lack of awareness of institution as to what local benefits derive from exercise and who sanctioned the process;

(2) the amount of material sent to each respondent discouraged some and confused others;

(3) no context had been established for the interview, which meant that interviewers had to "make their case" to a number of interviewees; and

(4) the mechanism for incorporating the interview findings into a planning process were not made clear to interviewees.

Hence, a number of factors diminished the efficacy of the CASC approach. But, starting with a discussion of activities, rather than outcomes, does facilitate early interview discussion Faculty members especially are more ready to talk about activities than they are about outcomes.

## Conclusion

The Perceived Usefulness of the Two Approaches. Four factors are perceived to be important in judging these approaches:

(1) Clarity of communications--how well were key concepts expressed and understood?

(2) Perception of relevance and interrelatedness--how well did respondents incorporate the concept and terminology into institutional possibilities?

(3) Institutional response--did decision-makers advance the purposes of outcomes identification and validation?

(4) Receptivity and/or resistance--to what degree did respondents contradict or complement the concepts presented in the interview or in other formats?

Clearly, there were both positive and negative aspects to each approach as suggested by evaluative statements reported in the previous section. Some of the problems with each approach could probably have been worked out with improved interviewee preorientation, extra practice in interviewing techniques and approach prior to starting the interviews, more carefully setting the stage within the interview, and so forth. Even so, however, a combination of the two approaches may be desirable, involving: (1) carefully planned orientation workshops; (2) starting the interviews with activities and going to broad outcomes, as in the "CASC approach;" and (3) going to specific outcomes and then back again to activities, as in the "NCHEMS approach."

What, then, are the benefits of the concepts, approaches, and instrumentation as developed by the CASC/NCHEMS effort? Two seem especially apparent. The first is bridge-building in the academic and institutional planning cycle. Academic planners are confronted with a panoply of expectations and severe constraints on resources. Expectations either become canonized in the college's mission statements or they submerge, awaiting resuscitation through the next foundation grant. Granting consensus on goals, the planners are then confronted with programmatic reinforcement of, or deviance from, goal attainment. A second benefit, that we as researchers have witnessed, is the stimulation of faculty members toward consideration of larger-than-classroom issues. At one college a professor of chemistry averred that the issues

which transcend courses, classes, and departments are at the heart of liberal education. Faculty members who reacted negatively to the concepts of outcomes identification were similarly stimulated to look beyond the shibboleths and pat assumptions that most of us shield ourselves with. In a sense, outcomes identification brings assumptions about procedures and commitment to purposes out into the open for discussion, debate, and dialogue. Sharing of goals and outcomes among departmental faculty members can be the first step toward collegial relations among all faculty members. The prospect of community building in academic environments can enrich all sectors of higher education, from students seeking guidance and instruction, to professors and administrators seeking a wholeness and unity in the academic enterprise.

The Perceived Usefulness of the Outcomes Structure. The "NCHEMS approach" was built around the Outcomes Structure, and it did give structure and an impetus to the interviews. However, the code numbers were disconcerting to some, as was the "psychological jargon" to a few others. And it was not until the interview situation that most interviewees seemed to start sensing real potential significance for the Structure. At the end of each interview, if there was time, the interviewee was asked to rate the potential usefulness of the Outcomes Structure, based on their limited experience with it thus far. Table 2 presents tabulations of the replies to this question. These limited data indicate that the reactions of most respondents to the Structure was by this time fairly positive. Appendix E lists the cautions and potential problems with the Structure mentioned by particular respondents, and specific uses for the Structure that different people perceived.

TABLE 2

EXPRESSED OPINIONS OF RESPONDENTS
CONCERNING THE USEFULNESS OF THE STRUCTURE[a]

| | Did Not Discuss It | Definitely Useful | May Be Useful | Not Useful | Said That They Did Not Understand it Enough to Judge |
|---|---|---|---|---|---|
| College A | | | | | |
| Administrators | 5 | 11 | 3 | 3 | 1 |
| Faculty | 10 | 13 | 9 | 0 | 2 |
| Students | 4 | 6 | 1 | 1 | 0 |

[a]Each number indicates how many people in that group (identified in the left margin) gave a particular response (identified by the column heading).

The "CASC approach" was not built around the Structure, but utilized it in the attempt to make the transition from a focus on activities to linking activities to outcome areas. In this sense it was central to understandings of the relationships of activities to the larger purposes toward which those activities are directed. Without the Outcomes Structure categories, the faculty members could have focused on activities without any systematic examination of the larger purposes. The Outcomes Structure was also noted to serve as a taxonomic device for communicating outcomes across disciplinary lines.

The evidence thus suggests that the Outcomes Structure was facilitative in the efforts of both approaches. It is possible, however, that it could have had more of an impact if it had been applied in a different way. Furthermore, this is not to suggest that the Outcomes Structure is complete and of the best possible form and content. As mentioned in an earlier section, it is expected that the Structure will continue to develop and be improved as it is used in many different contexts within different types of institutions.

REFERENCES


Derr, R.L. A Taxonomy of Social Purposes of the Schools: A Handbook. New York: David McKay, 1973.

Klingberg, G. A Scheme for the Classification of Educational Objectives: The LIGRU Project. Gothenberg, Sweden: Department of Educational Research, Gothenberg School of Education, 1970. ED 060 520

Lenning, O.T. "The Potential Outcomes of College." Unpublished paper, National Center for Higher Education Management Systems at WICHE, 1976.

Lenning, O.T. "Results of the CASC/NCHEMS Small-College Outcomes Identification Project: A Summary." Unpublished paper, National Center for Higher Education Management Systems, 1977.

Lenning, O.T. Previous Attempts to "Structure" Educational Outcomes and Outcome-Related Concepts: A Compilation and Review of the Literature. Boulder, Colo.: National Center for Higher Education Management Systems, in press. (a)

Lenning, O.T. An Overview of the Outcomes Structure and Its Implications for Postsecondary Education Administrators. Boulder, Colo.: National Center for Higher Education Management Systems, in press. (b)

Lenning, O.T., Y.S. Lee, S.S. Micek, and A.L. Service. A Structure for the Outcomes of Postsecondary Education. Boulder, Colo.: National Center for Higher Education Management Systems, in press.

Micek, S.S. and R.A. Wallhaus. An Introduction to the Identification and Uses of Higher Education Outcome Information. Boulder, Colo.: National Center for Higher Education Management Systems at WICHE, 1973.

# APPENDIX A
## CODED LISTING OF CATEGORIES AND SUBCATEGORIES FOR THE AUDIENCE DIMENSION

10. Individual/Group Clients--This category refers to persons or groups of persons who are direct client of the postsecondary education unit of concern and/or their immediate associates, such as family and relatives or peers.

    11. Students--Individuals or groups of individuals who currently are enrolled in the program, institution, or system of postsecondary education.

    12. Former Students--Individuals or groups of individuals who formerly were enrolled in the program, institution, or system of postsecondary education.

    13. Family and Relatives of Students or Former Students

    14. Peers and Associates of Students or Former Students

    15. Faculty

    16. Staff Other than Faculty

    17. Other Individual/Group Clients--An example would be an individual who is none of the above but is served by an advisory service offered by the college.

20. Interest-Based Communities--This category refers to large groups that are identified as entities working toward a *self-defined interest or mission*.

    21. Private Enterprise Communities--Communities where a major purpose is financial remuneration and profit--for example, corporations, small businesses, and farmers.

    22. Association Communities--Communities where members belong on the basis of affiliation rather than employment, such as unions and professional societies.

    23. Government Communities--Communities designed to administer government regulations and services, such as city hall, state department of education, and legislative communities.

    24. Nongovernmental/Public Service Communities Other than the Institution Producing the Outcome--Nonprofit service organizations, such as schools, hospitals, welfare agencies, philanthropic foundations, colleges (other than the college producing the outcome), and research organizations.

    25. Institution or Institutional Unit Producing the Outcome--The postsecondary institution and or units within that institution that are perceived as the producer/facilitator of the outcome(s) of concern.

    26. Other Interest-Based Communities--An example would be an ad hoc coalition task force of representatives from two or more of the above areas.

30. Geographic-Based Communities--This category refers to large groups defined on the basis of *functional territorial boundaries*.

    31. Local Community--A township, city, county, metropolitan area or other type of locality having particular boundaries. It is not necessarily restricted to the legal or jurisdictional boundary, but the functional one in which the impact of the institution is (or should be) directly and physically felt. The boundaries will vary with the institution/program and outcome of concern.

    32. The State

    33. A Region--An aggregation of states or parts of states.

    34. The Nation

    35. An International Community

    36. Other Geographic-Based Communities--An example would be a research discovery that affects primarily people living in the coldest latitudes, or where it snows a lot.

40. Aggregates of People--This category refers to subpopulations of people *distinguished by particular characteristics that may indicate common concerns, needs or wants*, but who do not necessarily have a common interest or mission, and therefore do not constitute communities.

    41. Ability Level Subpopulations--Subpopulations defined according to level of ability/proficiency on general intellectual functioning or specific skills--for example, gifted, typical, disadvantaged, or skilled, semi-skilled, unskilled.

    42. Age Subpopulations

    43. Educational Level Subpopulations

    44. Income Level Subpopulations

    45. Occupation Subpopulations

    46. Physical Disability Condition Subpopulations

    47. Race Subpopulations

    48. Sex Subpopulations

    49. Other Such Aggregates

50. Other Audiences--Examples would be the natural environment that is affected by university-sponsored research (which in turn would be expected to have impacts on audiences such as individuals and communities) and populations of animals (such as the animals affected by efforts to keep depleted species from becoming extinct or by the development of veterinary medicines).



BEST COPY AVAILABLE

# APPENDIX B

CODED LISTING OF THE SECOND-AND THIRD-LEVEL SUBCATEGORIES

FOR EACH FIRST-LEVEL CATEGORY OF THE TYPE-OF-OUTCOME DIMENSION[a]

| Category Code Number | Entity Being Maintained or Changed |
|---|---|
| 1000 | ECONOMIC OUTCOMES |
| 1100 | Economic Access and Independence Outcomes |
| 1110 | Economic Access |
| 1120 | Economic Flexibility, Adaptability and Security |
| 1130 | Income and Standard of Living |
| 1200 | Economic Resources and Costs |
| 1210 | Economic Costs and Efficiency |
| 1220 | Economic Resources (including employees) |
| 1300 | Economic Production |
| 1310 | Economic Productivity and Production |
| 1320 | Economic Services Provided |
| 1400 | Other Economic Outcomes |
| 2000 | HUMAN CHARACTERISTICS |
| 2100 | Aspirations |
| 2110 | Desires, Aims, and Goals |
| 2120 | Dislikes, Likes, and Interests |
| 2130 | Motivation or Drive Level |
| 2140 | Other Aspirational Outcomes |
| 2200 | Competence and Skills |
| 2210 | Academic Skills |
| 2220 | Citizenship and Family Membership Skills |
| 2230 | Creativity Skills |
| 2240 | Expression and Communication Skills |
| 2250 | Intellectual Skills |
| 2260 | Interpersonal, Leadership, and Organizational Skills |
| 2270 | Occupational and Employability Skills |
| 2280 | Physical and Motor Skills |
| 2290 | Other Skill Outcomes |
| 2300 | Morale, Satisfaction, and Affective Characteristics |
| 2310 | Attitudes and Values |
| 2320 | Beliefs, Commitments, and Philosophy of Life |
| 2330 | Feelings and Emotions |
| 2340 | Mores, Customs, and Standards of Conduct |
| 2350 | Other Affective Outcomes |
| 2400 | Perceptual Characteristics |
| 2410 | Perceptual Awareness and Sensitivity |
| 2420 | Perception of Self |
| 2430 | Perception of Others |
| 2440 | Perception of Things |
| 2450 | Other Perceptual Outcomes |
| 2500 | Personality and Personal Coping Characteristics |
| 2510 | Adventurousness and Initiative |
| 2520 | Autonomy and Independence |
| 2530 | Dependability and Responsibility |
| 2540 | Dogmatic/Open-Minded, Authoritarian/Democratic |
| 2550 | Flexibility and Adaptability |
| 2560 | Habits |
| 2570 | Psychological Functioning |
| 2580 | Tolerance and Persistence |
| 2590 | Other Psychological Outcomes |
| 2600 | Physical and Physiological Characteristics |
| 2610 | Physical Fitness and Traits |
| 2620 | Physiological Health |
| 2630 | Other Physical or Physiological Outcomes |

(continued)

[a]The fourth-level categories, into which any of the categories listed here can be divided, are "maintenance" (a fourth digit of "1") and "change" (a fourth digit of "2").

# APPENDIX C

## "NCHEMS APPROACH" INTERVIEW INSTRUMENT

College: _____

Person(s) being interviewed: _____

Position: _____

CASC/NCHEMS OUTCOMES PROJECT
ON-CAMPUS INTERVIEW OUTLINE

1. What specific audiences (as defined by the Outcomes Structure) are of serious and direct concern to your institutional unit?

_____

_____

_____

2. Concerning Student Learning Outcomes, which of the following outcome categories from the Outcomes Structure are of MOST concern to your institutional unit (turn to Table 4 on page 20 of An Overview of the Outcomes Structure to see if there are others of special concern.) PLACE AN 'E' BEFORE THOSE THAT ARE ESSENTIAL, AN 'I' BEFORE THOSE THAT ARE IMPORTANT, AND AN 'N' BEFORE THOSE NOT IMPORTANT.

COMPETENCE AND SKILLS

____ 2210 Academic Skills
____ 2220 Citizenship and Family Membership Skills
____ 2230 Creativity Skills
____ 2240 Expression and Communication Skills
____ 2250 Intellectual Skills
____ 2260 Interpersonal, Leadership, and Organizational Skills
____ 2270 Occupational Skills
____ 2280 Physical and Motor Skills

_____

KNOWLEDGE AND UNDERSTANDING

____ 3100 General Knowledge and Understanding
____ 3200 Specialized Knowledge and Understanding

_____

OTHER LEARNING OUTCOMES

____ 2110 Desires, Aims, and Goals
____ 2120 Dislikes, Likes, and Interests
____ 2130 Motivation or Drive Level
____ 2310 Attitudes and Values
____ 2320 Beliefs, Commitments, and Philosophy of Life
____ 2330 Feelings and Emotions, for example, appreciations and satisfaction
____ 2400 Perceptual Awareness, and Perceptions of Self, Others, and Things
____ 2510 Physical Fitness and Traits
____ 2520 Physiological Health
____ 2600 Psychological Adjustment Factors
(which ones? _____)

_____

OTHER

_____

_____

_____

3. For each category selected, what specific, observable outcomes are of MOST concern? (For example, judge's ratings of performance, amount of student involvement, or some product developed by the student.)

( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____
( ) _____

4. For each outcome selected in 3, what observations or measures would constitute concrete evidence that the particular learning outcome occurred?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

5. For each outcome selected in 3, what specific student activities and experiences would you expect to especially contribute to the realization of that outcome (for example, peer tutoring, participation in political campaigns, or community service projects), and when should that activity or experience ideally occur during the student's college career in order to have the greatest impact?

6. If you mentioned other audiences (than students) in response to Item 1, which outcome categories and specific outcomes would it be MOST important to stimulate for each audience?

7. Based on the experience you have had with it by now, to what extent do you feel the Outcomes Structure has any potential to be useful in the small college setting?

# APPENDIX D

## "CASC APPROACH" INTERVIEW INSTRUMENT

4. Now that you have identified SLAs at each level, will you please tell us which outcomes they are designed to achieve and why you think they reach these outcomes? *Interviewer should report responses on the appropriate form.*

5. Are there Activities which do not quite fit our definition? Please give us some examples.

6. Could you share your thoughts on the promise of outcome centered higher education. Are outcomes generally measurable? Can abstract skills ever be certified in precise fashion. To what degree do you think your colleagues understand or accept the notion of specifying outcomes? Does the concept of "outcomes" hold promise for evaluating education toward greater effectiveness?

# INTERVIEW INSTRUMENT

College:_____ Type of Respondent:_____

These questions are part of an effort to further our understanding of student outcomes in higher education. We hope to move beyond conventional wisdom in specifying outcomes and by relating these outcomes to activities in the college experience.

*The interviewer should make the interviewee feel comfortable by engaging in some general discussion about the campus, the program that he or she represents, and something about his or her experience in teaching. Record the field in which he or she teaches and something about their experience in teaching.*

1. We would like to begin our discussion with a review of our definition of a Student Learning Activity. Could you tell us how an SLA differs from other activities in which the students participate?

2. Let us discuss the three SLAs you identified on the Advanced Organizer. *The interviewer should record the examples on the next pages.* Can you answer the questions raised on the Advanced Organizer?

3. Can you give us other examples of SLAs at each of the three levels and tell us how the students demonstrate achievement?

PROGRAM/DISCIPLINE LEVEL

| ACTIVITY | STUDENT DEMONSTRATED ACHIEVEMENT | WHY THESE OUTCOMES? | OUTCOMES | COMMENTS |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# APPENDIX E

## CAUTIONS AND POTENTIAL PROBLEMS WITH THE NCHEMS OUTCOMES STRUCTURE

## AND

## PERCEIVED USES FOR THE STRUCTURE MENTIONED BY VARIOUS INTERVIEWEES

CAUTIONS AND POTENTIAL PROBLEMS WITH THE GOALS OUTCOMES

STRUCTURE THAT WERE MENTIONED BY VARIOUS INTERVIEWEES

- Need to get students and alumni involved in outcome planning also.
- Need to show people how it will help.
- This kind of self analysis is very important, but will it make any difference on the campus.
- Might work if you have the right setting, like a workshop away from the campus.
- Don't use it unless you have the time and energy to change.
- One needs time away from day-to-day pressures in order to implement this.
- Resistance to the bureaucrates in which the document is written--I don't want to go to the trouble of using it unless you can show me that it is directly relevant to my department and its students.
- Potentially very time consuming--safeguards should be built in to insure that the time drain is not too great (find out the outcomes of the system that can be achieved in a short time).
- It may promise more than it delivers.
- Is the system really hierarchical--is hierarchy the appropriate model?
- Need funds for the department to develop long term workshops to incorporate use of the Structure.
- If it is presented properly, students could become interested in the Structure.
- I like it. Dynamite! It could be such a long-term thing, however.
- Difficult to reach consensus on such things--needs a good leader.
- Takes too much time---what is needed is funds for a week's staff retreat in a retreat setting.
- More useful at small colleges than elsewhere because we have more of a chance to see and understand the activities which lead to outcomes (the why of outcomes) and we get to know our students very well.
- Need to start using this in goal setting at the institution-wide level. If you start at the department level will go in all directions so that when people get together at the institution-wide level will be so far apart will never be able to reconcile.
- It is easier to think of outcomes in specific and concrete terms at the department level, so should start applying the Structure to reach consensus at that level before you try to reach some consensus on college-wide goals.
- Need to have total faculty involvement at the departmental level if you are going to make good use of the Structure.
- An excellent instrument if used and the system instructions understood and participated in by most of the faculty in the small college. The problem may lie in attitudes--a strong disposition and loyalty to the liberal studies and classical structure. . . time constraints, and using the Structure as they envision it. Once it is learned and implemented, however, the negatives could be reversed and it could speed the processes of planning and development.
- A problem with the Structure concerns differences in definitions, and it includes jargonese.
- As a student majoring in religious education I tend to think in more general terms. Therefore, it is limiting--it limits my options. I would prefer a completely open-ended approach.
- It would be useful to the extent that it serves rather than enslaves. Minimal outcomes should be emphasized. Should let more happen beyond the stated outcomes.
- I question its real utility, although it is an asset that is systematized.
- I heard from a staff member who attended the workshop yesterday morning that a lot of good ideas were presented, but that they were perhaps overly idealistic.
- People need to see the connections sooner to their on-going tasks. Needed is a week at a retreat setting working with faculty on institutional goals and objectives, and how to implement them.

NOTE: Reprinted from Lenning (1977).



BEST COPY AVAILABLE

USES FOR THE STRUCTURE THAT VARIOUS INTERVIEWEES REPORTED PERCEIVING

- Can be an aid in planning our program.
- Vehicle for curricular change.
- Helps one be systematic in thinking about outcomes (2).
- Encourages emphasis on desired goals rather than activities.
- Can serve as a stimulus to think in specific outcome terms.
- Defining goals and objectives for the college, divisions, and course.
- Forces us to be more systematic in thinking about what we are trying to accomplish.
- Useful for proposal development.
- Setting goals and objectives.
- Useful in setting goals and prioritizing them on a value basis.
- Could be useful also for personal planning of college students concerning what they want from their college careers (3).
- Could help us develop needs assessment focuses.
- It has made me stop and think about what we are trying to accomplish, and is making the objectives in the back of my mind conscious.
- Outcomes Structure may facilitate curricular reorganization by helping to eliminate overlap in content.
- Should help to increase efficiency.
- Structure may facilitate generation of a list of contents of a portfolio of what students can do.
- It is systematic, all-inclusive, adaptable, and helps to prioritize.
- Could speed the process of planning and development.
- Forces you to think about things you wouldn't otherwise think about in a concrete manner.
- Helps to specify goals and determine priorities.
- Can help us understand the why of outcomes.
- Able to focus more on the inadequacies of programs.
- Hadn't thought in this way before; made me aware of and knowledgeable about some of the outcomes I am striving for.
- Similar in some respects to the MBO forms, but better.
- Useful for dialogue--for raising questions.
- Can provide stimulation to guide direction.
- Could be a unique tool for helping to determine what direction we should be going.
- Gets at the concrete things we value in our thinking and our actions, and balances one against the other.
- Could be useful to students in evaluating options--at the sophomore or junior level, and especially if undecided.
- Could use it to help refine our goals.
- Spreads things out and serves as a valuable checklist.
- This project caused me to sort this department out a little bit.
- This is probably being done somewhat and systematically in our department already (education department), but even some of objectives has been too limited and we have not taken an adequate look at the relationships between faculty persons' actions and the desired outcomes. Impact 2 for the structure could especially be useful in this case.
- I have thought in similar ways before and found it useful. I will be having a retreat for my staff in January, and am considering use of this device at that retreat.

NOTE: Reprinted from Lenning (1977).





BEST COPY AVAILABLE

DRAFT
For review purposes only.
Not to be reprinted or quoted
directly or indirectly without
written permission of the author.

# ASSESSING STUDENT EDUCATIONAL PROGRESS

Oscar T. Lenning
Senior Staff Associate
National Center for Higher Education Management Systems

A paper prepared for publication in the AAHE/ERIC April, 1978
Research Currents



BEST COPY AVAILABLE

Preliminary Draft for
Review Purposes Only

Assessment of student educational achievement has always been a necessary function within postsecondary education institutions, and its importance is as great today as ever. Furthermore, re-evaluation of procedures being used for such assessments is desirable in a day when accountability is a catchword, ever more diverse groups of students are entering postsecondary education, complaints about test bias and high attrition rates continue unabated, a decrease in the size of the traditional age student pool is imminent, and innovative new assessment methods are being developed. The traditional methods of assessment are less than adequate for today's needs in postsecondary education, especially with regard to its use in institutional and student decision making.

Traditionally, paper and pencil tests have been relied on almost exclusively in most segments of higher education for assessing educational progress. Not all assessment mechanisms used in traditional academic courses are of this variety, however. Examples of exceptions are in physical education, speech and drama, writing classes, art and music, professional internships and practicums, and many vocational-technical programs, where direct observation of student performance or products often constitutes the primary means of assessment. A wide variety of methods and approaches to assessing student educational progress are available. College administrators and faculty in all postsecondary institutions need to consider these various approaches--many of them practical and cost effective--as alternatives and supplements to methods they now rely on for assessment of student progress in coursework and programs, and for institution-wide assessment. Many college and university officials and faculty members, however, have either ignored or been unaware of the potential uses and benefits of such nontraditional assessment procedures. Thus, the major purpose of this issue of Research

Currents is to call attention to the many alternative procedures for assessing student educational progress and where one can go for more information.[1]

## The "What" and "Why" of Such Assessment

Traditionally, student educational progress in college has been thought of primarily in terms of written and oral communication competency, intellectual competency, and increased knowledge and understanding. It is now common to think in broader terms, however, to whatever developments and attainments are being aimed at for students in a curricular course or program offered by a postsecondary education institution. Thus, Payne (1974) refers to both cognitive and affective outcomes of a course or program in his book on "the assessment of learning". On the other hand, Ebel (1972) insists that all affective development involves a cognitive component, which he would contend is what makes it learning. Either way, educational learning could include the imparting of attitudes and values (Kohlberg, 1973), value clarification, confidence and self concept development, development of various personality characteristics, development of improved interpersonal sensitivity and functioning, development of skills ranging all of the way from learning to relax to complex theory and model development, or the development of occupational habits (such as punctuality) and skills (ranging all the way from flower arranging to sophisticated technological skills). As discussed here, educational progress is broad in concept, including the entire range of desired student change and attainments resulting from planned course and program activities occuring in the classroom, outside of the classroom, and off-campus. Of course, what is desirable varies from person to person; and changes considered to be undesirable should not be overlooked because thay can have as much or more consequence for students and their lives as changes considered to be desirable.

---

[1] For an earlier but more in-depth treatment of this overall topic, see Lenning (1976)

Assessment is a term that was made popular by psychologist Henry Murray and his associates in the late 1930's as they developed theories regarding personal need and methods for determining such need. It refers to the appraisal of persons and/or specific aspects of persons, for example, their academic achievements. Some assessment specialists have limited the focus of this concept to identification--have equated it to measurement. Others relate it also to developing understanding of the occurrence of progress, and to conceptualizing recommended or alternative courses of action to foster greater progress that are implied by the findings--they equate it to evaluation. As used here, assessment is broader than measurement, but narrower in concept than evaluation; it involves measurement and is a component of and contributes to evaluation. By assessing student educational progress we mean that such achievement is being measured, analyzed, and appraised, and that potential implications of this achievement are being explored. But, alternative or suggested decisions regarding courses of action that may be implied are not being laid out during the assessment process--they are being left to the evaluation phase.

Assessment of student educational progress can be applied to many puposes in higher education. For students, the results of such assessment can serve as a motivational incentive, can provide self confidence, and can assist self-diagnosis of strengths and weaknesses and lead to guidelines for self direction. For members of the college staff, the results of such assessment can be applied in diagnosing student problems, appraising student readiness, classifying students and placing them into courses and programs, planning and structuring student learning experiences, counseling and advising students, grading and awarding promotion or merit recognition, evaluating effectiveness and productivity, and evaluating innovations and programs.

## Conducting Assessments of Educational Progress

Payne (1974) lists seven broad steps in assessing cognitive and affective learning that most assessment specialists would agree with: (1) specifying detailed goals and objectives, (2) designing the assessment system, (3) selecting data-gathering methods, (4) collecting relevant data, (5) analyzing and summarizing data, (6) contrasting data and objectives, and (7) feeding back results. Space will only allow comments about some of them.

As Palola and Padgett (1971) have stated, "too little attention is paid to defining the aims of the educational process beyond coining global abstractions (p.7)." If one is to have effective guidelines for conducting actions to bring about accomplished ends for one's students, the course, program, and/or institutional goals that apply need to be transformed into concrete, observable specifics. Such concreteness is also needed for purposes of assessment. As found in a project conducted by the Council for the Advancement of Small Colleges and NCHEMS, however, this is a difficult problem for many people, and especially for faculty members in a number of disciplines who are used to thinking primarily in terms of process rather than outcomes. That project developed some step-by-step procedures that have been helpful (Lenning, 1977; Lenning and Lundin, 1977), and which allow staff to start with the specific student learning activities taking place or with a universe of potential learning outcome goal categories. Mager (1972, 1975) has provided two very useful, interesting and easy-to-read books that outline another approach. At the program or institutional level, consensus rendering procedures become important for this process - whether it be give-and-take group discussion or more sophisticated approaches such as card sorts or modified Delphi techniques.

Assessment design is another problem that is crucial to the entire effort. For every assessment a plan is needed that outlines the purposes of the assessment, the context in which the assessment will occur, the questions that need to be answered by the assessment, the data to be gathered for answering each

question, the data sources, data gathering and analysis strategies and procedures, feedback procedures, costs, how everything fits together into an integrated system, etc. The design must be realistic - feasible in terms of the costs and effort required - as well as effective in providing the information needed to answer the pertinent decision makers' questions. It must identify and provide a rationale concerning which specific groups of students should be assessed, which areas of attainment and development are to be assessed for each group, and how the assessment procedures and strategy will vary by group. For example, assessing older students' intellectual progress using a standardized instrument designed for and normed on teenage college students would be clearly inappropriate.

The design of an assessment for a particular course, program, or institution should be unique and tailored specifically to the situation at hand. There are a variety of general models available, however, that one can modify to meet local needs. At Empire State College (Palola and Lehemann, 1976) they have developed a comprehensive learning assessment system that gathers data from student self report, instructor observations, writing samples, standardized and local tests, administrators, etc. Theirs is a longitudinal approach, and they relate learning outcomes to costs and a variety of other factors, plus suggest strategies,and procedures for sampling (when it is needed), data collection, analysis and dissemination and use of the data. Their analytic strategy for group data involves three steps: identifying the functions of all variables; manipulating and reducing the raw data to statistics through such procedures as computing averages, tabulations, cross translations, and analysis of variance; and conducting multivariate analysis such as discriminant analysis. (Other assessment models rely exclusively on more simple and unsophisticated analytical procedures - such as graphical profile analysis - which can oftentimes be just as effective.) Concerning dissemination and use of the data, they make the important point that the mere reporting of the data will not lead to data

use. For each decision maker of concern, the data should be transformed into a brief, succinct informational report having an appropriate format and content that speaks directly to his/her concerns.

A quite different model was developed by the Division of Occupational Education Instruction in the New York State Education Department (1976). They developed useful guidelines and procedures for assessing cognitive, psychomotor, and affective outcomes within two different contexts: (1) when the assessment is to be used to assign grades and (2) when the assessment is to be used to evaluate and plan instruction. They concluded from their study that paper and pencil tests should be used for cognitive assessment in both contexts; performance tests should be used for psychomotor assessment in both contexts; and questionnaires, inventories, logs, diaries, and anecdotal records should be used for affect assessment, but only in the area of evaluation and planning instruction. (Conversely, the Empire State College Model had emphasized the importance of having multiple types of measures to supplement one another in measuring the same outcome - for example, standardized tests, self report, and performance observations by faculty to assess reasoning ability and critical thinking.) Because it is difficult to obtain reliable measures of affective achievement, and since measures that do exist usually just assess knowledge about the attitude or other variable, these researchers concluded that the affective area should not be considered in assigning grades.

Other different assessment models also have appeared recently. For example, Pottinger and Klemp (1975, 1976) developed a General Integrative Model that involves the use of several tests and measures for evaluating the integration of life skills within students, and which investigates how students process and integrate imformation--as contrasted to storage and retrieval of information. As another example, Hulsart (1975) applied the National Assessment of Educational Progress model to the classroom for use by the teachers

and students to assess educational progress. Both performance and paper and pencil tests are used. Still another example is a model promoted by Rivas (1976) for using assessment to test hypotheses about skill development. Hypotheses to be tested can come from reviewing the literature, interviewing experts in the field, critical examination of previous assessment results, or qualitative (observational) field research prior to quantitative assessment.

Over the years, many of the issues and problems in assessment have involved the measurement of change. Overcoming such problems is also a design role. Thus, in longitudinal assessment it is important to compare those dropping out along the way to those remaining, using input information about the students characteristics and initial levels of performance or status. Even if there were no dropout group, considering such input information would be important for interpreting the results of the assessment of educational progress.

Concerning another problem related to change, a number of specialists in the area have stated that for analysis purposes change scores or average change should not normally be used in the analysis. Rather, they advise comparing the final status of the student or group of students to the final status of students having similar initial ability. For comparison across groups this can be accomplished by random appointment to each group initially, by group assignment through paired matching on input level, by comparing across similar initial-level strata, or through the use of sophisticated statistical adjustments to posttest scores that effectively equate initial levels (e.g., analysis of covariance).

If the desire is to correlate progress to other factors (in order to explore what the determinants of the progress might be), corrections for attenuation - a phenomenon that causes the observed correlations to be significantly lower than the true correlations - must be made. Werts and Linn (1976) have demonstrated in a preliminary way that a special "simplex model," which allows for the measurement error that causes attenuation, works

well in longitudinal studies for exploring determinants of student academic growth.

The Many Options in Choice of Measures

One cannot have assessment without measurement of some kind, but all measures have weaknesses (some more so than others). Many measures, in particular those in the affective area, should probably be referred to as indicators so that their relative inaccuracy is made apparent. Thus, it is a good idea to use multiple measures or indicators for a particular learning outcome unless one has complete confidence in one of the measures. If they all indicate that educational progress in that area has occurred for a student, there is a greater probability that such progress has in fact occurred than if only one of the measures were used. More than one method of data collection is also desirable, assuming it is economically feasible, because all data collection methods have strengths and weaknesses that vary from method to method and because some work better with different kinds of groups than do others. The use of multiple methods means that where one is weaker another can be stronger, plus the data collections system can be tailored to the characteristics of the diverse groups for which progress is being assessed.

Standardized paper and pencil tests are often used in program and institutional assessments, but in spite of some demonstrated reliability and general validity they often do not measure specifically what is of concern in the local assessment for particular groups of students. Examining Buros (1972), the Council on Postsecondary Accreditation (1975) compendium of assessment instruments, and reviews in measurement journals can suggest instruments to consider and allow one to judge their adequacy for a particular location and situation. It should also be noted here that the ETS Undergraduate Program Area Tests have just been revised and updated, and two new forms of the popular Field Test in business have been developed.

In many cases it will be desirable to develop local instruments tailored to local needs. There are an abundance of excellent books on standard measurement theory and the construction of norm-referenced tests, and the diversity

is such that both experienced and inexperienced instrument developers can be served. Important new knowledge becomes available yearly in this area, however, so it is desirable that a person on campus who is responsible for consulting with faculty and staff about their assessment problems and procedures also be assigned to keep up-to-date on such developments. Examples of such noteworthy developments are: Rowley's (1974) finding that multiple choice tests favor certain types of students over others; Ebel's (1970) finding that true-false tests are preferred for some types of purposes and content; Anderson's (1974) finding that cloze measures are useful for certain assessment tasks on the local campus; Wagner's (1976) finding that there are benefits as well as problems with having students construct their own classroom exams; Wittmaier's (1976) finding that written critique "evaluations" placed in the students files instead of grades provided more incentive for his students to do effective work than is the case with pass/fail grading; and Shannon's (1975) finding, for his students, that matching tests have a special advantage over multiple choice tests in assessing partial knowledge, plus his finding that the premises in a matching test should be organized into groups of five --more than that number of premises per group may mean that student skills not of concern, such as reading comprehension, attentiveness, and organization, will be tested as much as the knowledge and skills of concern.

As illustrated by Lange, Lehmann and Mehrens (1967), revising items takes less time, effort, and expense than developing items from scratch. Therefore, sharing items among departments and institutions, and the use of storage banks of test items that are flexible and can be easily accessed, is to be encouraged, as long as great care is taken to modify them appropriately for the new context. Another potential aid consists of books containing collections of experimental and/or empirically tested items and scales for particular areas of concern. Lenning (1977) identified some available source books, and presented cautions regarding their use, for the following areas: attitudes, social functioning,

occupational attitudes and characteristics, occupational education achievement, psychological characteristics, and self-concept. Other helpful resources that should be mentioned are Micek, Service, and Young (1975) and Pace (1975).

Locally-developed criterion-referenced paper-and-pencil tests are more often of use on campuses than are norm-referenced tests. Unlike norm-referenced tests that attempt to rank and discriminate among students, criterion referenced tests focus exclusively on the level of performance or mastery. Among several useful books on this topic, the one by Gronlund (1973) on developing classroom criterion-referenced instruments is "must" reading. As pointed out by Airasian and Madaus (1972), the most difficult problem in this kind of assessment is determining what should be the minimum, expected, and desired level of performance. Thus far, people have had to rely on experience, expert opinion, item content validity, and/or group consensus for such standards. For examples of criterion-referenced tests, see Knapp (1974).

As mentioned earlier, paper-and-pencil tests need to be supplemented by other types of data-gathering methods. This could be desirable even in areas such as knowledge, understanding, and analytical thinking, as demonstrated at Empire State College. Furthermore, in many areas paper-and-pencil tests are less appropriate than other methods. There are many methods for college administrators and faculty members to consider, and each will be useful in some circumstances and not in others. Fifty such assessment mechanisms were found mentioned in the literature, although some of them overlap, and they are listed below:[2] 1. anecdotal records, 2. audio-visual media procedures, 3. behavioral events analysis, 4. card sorts, 5. case studies, 6. charette,

---

[2]Each of the methods listed must be used with care, and procedures for applying it, plus its appropriateness for the local assessment situation, should be explored in depth. As an example, consider unobtrusive measures which provide indirect indications that a learning outcome has occured - for example, an increase in attendance at campus plays and art displays corresponding to the introduction of a course on appreciation of the arts. Thelin (1977) says about unobtrusive measures, "These obvious, isolated indicators have to be considered in clusters and tied to a conceptual framework if they are to be of significance for institutional monitoring [p. 113]." The reader can obtain

(footnote continued on page11)

7. checklists, 8. computer analysis, 9. computer-assisted instruction, 10. concerns conferences, 11. confrontation exercises, 12. critical incident technique, 13. diaries, 14. fact finding and decision-making exercises, 15. games (board games and otherwise), 16. group interviews, 17. group problem solving exercises, 18. in-basket techniques, 19. institutional records and other secondary data, 20. interview simulations, 21. inventories, 22. job element analysis, 23. leaderless group discussions, 24. logs, 25. on-the-job assessment by supervisors, 26. opinion polls, 27. oral exams, 28. oral presentations, 29. organizational climate technique, 30. performance tests, 31. product testing and assessment, 32. programmed cases, 33. questionnaires and rating forms, 34. ratings of expert judges or others, 35. ratings of self, 36. recording observed behavior or other observations, 37. reverse flow conferences, 38. role playing, 39. self monitoring, 40. self observation reports, 41. simulation games, 42. simulation models, 43. speak ups, 44. staffing conferences, 45. stress interviews, 46. structured interviews, 47. unobtrusive measures, 48. unstructured interviews, 49. work samples, 50. written diagnostic and trouble-shooting exercises.

---

(Footnote # 2 continued) an in-depth discussion of unobtrusive measures in a book by Webb and associates (1966). Some helpful discussions of other methods are also availabe, as follows: Many of the methods listed (Knapp and Sharon, 1975); opinion polls, speak-ups, charette, group interviews, concerns conferences, reverse-flow conferences (Witkin, 1975); use of motion pictures, television, photos, kinescope, and videotape for testing (Edling, 1968); programmed cases and organizational climate technique (Pottinger and Klemp, 1975, 1976); questionnaires (Oppenheim, 1966; Warren and Roelfs, 1972; Tull and Albaum, 1973; Bower and Renkiewicz, 1977); behavioral events analysis (McClelland, 1974; Pottinger and Klemp, 1975, 1976); job elements analysis (Primoff, 1973; Pottinger and Klemp, 1975, 1976); computer grading of essays (Levy and Fritz, 1972; Slotnick, 1972); records and other secondary data (Boyd and Westphall, 1972): self report (Baird, 1976); direct approaches to observing and recording behavior (Boyd and DeVault, 1966); use of self-charts of course progress (Swenson, 1974); objective scoring key for compositions (McGowan, 1976); innovative grading practices (Smith, 1976); self monitoring alternatives and their effect on achievement (Mount and Tirrell, 1977); and staffing conference assessment and its effect on achievement (Kelly and Dowd, 1975).

## Conclusion

A large number of alternative assessment tools from which college administrators and faculty can choose have been identified. Their relevance to what is to be assessed, and for whom, is the primary concern.

A special word should be said about a new and growing phenomenon in postsecondary education--assessment of competencies pertinent to real-life situations. In two excellent documents (1975, 1976), Pottinger and Klemp present a number of competency-based measures that have been validated and tested in both academic and real-world settings for the following areas: cognitive outcomes, affective outcomes, and social outcomes. They also list 12 characteristics and advantages of such measures (1976) that should be of great interest to many reading this article.

The American College Testing Program has in operation an Adult Performance Level Program that uses a paper-and-pencil instrument to access "functional competency"--the ability to perform the wide variety of tasks required in modern society. They have also developed and pilot tested an open-ended battery using films, videotapes, and audio cassettes to measure the desired general education outcomes of communication, solving problems, and clarifying values as they apply to the three "real life" areas of functioning in social institutions, using science and technology, and using art. In addition, they have developed, but not yet tested, an objective paper-and-pencil version of that battery.

Educational Testing Service has developed, but not yet validated, a paper-and-pencil instrument that is designed to measure competencies of college students in the areas of communication, analytic thinking, synthesizing ability, and social-cultural awareness. Students respond to open-ended questions about specific problem/situational cases. The instrument is easy to administer, requiring minimal training and expertise.

The CUE Center at Bowling Green State University has also developed a number of single-domain instruments for assessing generic competencies that are proactive, for example, critical thinking in managing confrontations and creating one's own discrimination. These instruments have been tested in a preliminary manner and found quite useful (see the paperback by Whimbey, 1976).

REFERENCES


Airasian, P.W., and Madaus, G.F. "Criterion-Referenced Testing in the Classroom." NCME Measurement in Education, 1972 (May), 3(4), 1-8.

Anderson, T.H. "CLoze Measures as Indices of Achievement Comprehension When Learning from Extended Prose." Journal of Educational Measurement, 1974, 11, 83-92.

Baird, L.L. Using Self-reports to Predict Student Performance, New York: College Entrance Examination Board, 1976.

Bower, C.P. and Renkiewicz, N.K. A Handbook for Using the Student Outcomes Questionnaires. Boulder, Colo: National Center for Higher Education Management Systems, 1977.

Boyd, H.W. and Westphall, R. Marketing Research. 3rd ed. Homewood, Ill.: Richard D. Irwin, Inc., 1972.

Boyd, R.D., and DeVault, V. "The Observation and Recording of Behavior." Review of Educational Research, 1966, 36, 529-551.

Buros, O.K. (Ed.) The Seventh Mental Measurements Yearbook. Highland Park, N.J.: Gryphon Press, 1972.

Council on Postsecondary Accreditation. Evaluation of Institutions of Postsecondary Education: An Annotated List of Instruments. Washington, D.C.: The Council on Postsecondary Accreditation, 1975.

Ebel, R.L. "The Case for True-False Items." School Review, 1970, 78, 373-389.

Ebel, R.L. "Can Teachers Write Good True-False Test Items?" Journal of Educational Measurement, 1975, 12, 31-35.

Edling, J.V. "Educational Objectives and Educational Media." Review of Educational Research, 1968, 38, 177-194.

Gronlund, N.E. Preparing Criterion-Referenced Tests for Classroom Instruction, New York: Macmillan, 1973.

Hulsart, R. "Use of the National Assessment Model for Classroom Evaluation." Denver, Colo: National Assessment of Educational Progress, April 1975. ED 135 839.

Kelly, F.D., and Dowd, E.T. "The Staffing Conference: An Approach to Student Evaluation." Counselor Education and Supervision, 1975, 15, 135-139.

Knapp, J. A Collection of Criterion-Referenced Tests. T.M. Report No. 31. Princeton, J.N.: ERIC Clearinghouse on Tests, Measurements, and Evaluation, 1974. ED 099 427.

Knapp, J., and Sharon, A. A Compendium of Assessment Techniques. Princeton, N.J.: Educational Testing Service, 1975.

Kohlberg, L. "The Development of Moral Stages: Uses and Abuses." Proceedings of the 1973 Invitational Conference on Testing Problems. Princeton, N.J.: Educational Testing Service, 1973.

Lange, A., Lehmann, I.J., and Mehrens, W.A. "Using Item Analysis to Improve Tests." Journal of Educational Measurement, 1967, 4, 65-68.

Lenning, O.T., The Outcomes Structure: An Overview and Procedures for Applying it in Postsecondary Education. Boulder, Colo: National Center for Higher Education Management Systems, 1977.

Lenning, O.T., "Assessing Student Progress in Academic Achievement." In L.L. Baird (Ed.), Assessing Student Academic and Social Progress: New Directions for Community Colleges. San Francisco: Jossey-Bass, 1976.

Lenning, O.T., and Lundin, E.G. "Preliminary Tryouts of the NCHEMS Outcomes Structure at Four Colleges." In R.H. Fenske (Ed.), Proceedings of the 1977 International Forum on Research and Planning in Higher Education. Tallahasee, Florida: Association for Institutional Research, in press.

Levy, L.B., and K.V. Fritz. Status Report on the Computer Grading of Essays. Madison, Wi.: University of Wisconsin, Counseling Center, June, 1972. ED 069 759.

Mager, R.F. Goal Analysis. Belmont, Calif.: Fearon, 1972.

Mager, R.F. Preparing Instructional Objectives. 2nd ed. Belmont, Calif.: Fearon, 1975.

McClelland, D.C., and Kemp, G. Report to the Executive Office of Manpower Affairs on the Validation of a Human Service Workers Test. Boston: McBer and Co., 1974.

McGowan, M. "Objective Evaluation of English Composition." Doctoral Dissertation, Louisiana State University, 1976. ED 136 282.

Micek, S. S., Service, A. L., and Lee, Y. S. Outcome Measures and Procedures Manual. Field Review Edition. Boulder, Colo.: National Center for Higher Education Management Systems, 1975.

Mount, M. K., and Tirrell, F. J. "Improving Educational Scores Through Self-Monitoring." Journal of Educational Research, 1977, 71, 70-73.

New York State Education Department, Division of Occupational Education Instruction. Measuring Student Achievement in Health Occupations Education. Albany, N.Y.: Author, 1976. ED 139-818.

Ohmer, M., and Edgerly, J. W. The Testing and Grading of Students. New Rochelle, N.Y.: Change Magazine, 1976. ED 125 504.

Oppenheim, A.N. Questionnaire Design and Attitude Measurement. New York: Basic Books, 1966.

Pace, C. R., and Associates. Higher Education Measurement and Evaluation Kit. Rev. Ed. Los Angeles: Laboratory for Research on Higher Education, UCLA, 1975.

Palola, E.G., and Lehmann, T. "Student Outcomes and Institutional Decision Making with PERC." In O. T. Lenning (Ed.), Improving Educational Outcomes: New Directions for Higher Education. San Francisco: Jossey-Bass, 1976.

Palola, E. G., and Padgett, W. Planning for Self-Renewal: A New Approach to Planned Organizational Change. Berkeley, Calif.: Center for Research and Development in Higher Education, University of California, 1971.

Payne, D. A. The Assessment of Learning: Cognitive and Affective. Lexington, Mass.: Heath, 1974.

Pottinger, P., and Klemp, G. Final Report to the Fund for the Improvement of Postsecondary Education. Boston: McBer and Co., October 1975. ED 134 540.

Pottinger, P., and Klemp, G. Concepts and Issues Related to the Identification, Measurement and Validation of Competence. Boston, Mass.: McBer and Co., 1976. ED 134 539.

Primoff, E. How to Prepare and Conduct Job Element Examination. Washington, D.C.: Bureau of Policies and Standards, U.S. Civil Service Commission, 1973.

Rivas, F. W. "Hypothesis-Testing in Large-Scale Assessment." Paper presented at the Education Commission of the States Annual Conference on Large-Scale Assessment, Boulder, Colo., June 1976. ED 135 838.

Rowley, G. L. "Which Examinees Are Most Favored by the Use of Multiple Choice Tests?" Journal of Educational Measurement, 1974, 11, 15-23.

Shannon, G. A. "The Construction of Matching Tests: An Empirical Statement." Paper presented at the annual meeting of the National Council on Measurement in Education, Washington, D.C., April 1975. ED 111 873.

Slotnick, H. B. "Toward a Theory of Computer Essay Grading." Journal of Educational Measurement, 1972, 9, 253-263.

Smith, T. H. Innovative Grading Practices: An Annotated Bibliography. August 1976, ED 132 996.

Swenson, L. C. "The Effects of Reinforcing Self-Charting of Course Progress on Course Work Productivity in College Courses." Paper presented at the annual convention of the Western Psychological Association, San Francisco, April 1974. ED 110 909.

Thelin, J. R. "Beyond the Factory Model: New Strategies for Institutional Evaluation." College and University, 1976, 51, 161-164.

Tull, D. S., and Albaum, G. S. Survey Research: A Decisional Approach. New York: Intext Educational Publishers, 1973.

Wagner, E. H. Use of Student-Composed Tests and Their Effect on the Attitudes and Task Performance of University Students. 1976. ED 129 754.

Webb, E. J., Campbell, D. T., Schwartz, R. D., and Sechrest, L. Unobtrusive Measures: Nonreactive Research in the Social Sciences. Chicago: Rand McNally, 1966.

Werts, C. E., and Linn, R. C. Study of Academic Growth Using Simplex Models. Princeton, N.J.: Educational Testing Service, June 1975. ED 113 369.

Whimbey, A. Intelligence Can Be Taught. New York: Bantam Books, 1976.

Witkin, B. R. An Analysis of Needs Assessment Techniques for Educational Planning at State, Intermediate, and District Levels. Hayward, Calif.: Office of Alameda County Superintendent of Schools, 1975. ED 108 370.

Wittmaier, B. C. "Student Reactions to Graded and Non-Graded Courses." Paper presented at the annual convention of the American Psychological Association, Washington, D.C., September 1976. ED 137 687.

# PART II

## APPLYING THE OUTCOMES STRUCTURE IN A SPECIFIC ADMINISTRATIVE AREA: THE CASE OF STUDENT AFFAIRS ADMINISTRATORS

ROUGH DRAFT FOR REVIEW
PURPOSES ONLY. Not to be
Quoted or Referenced Without
Prior Approval of the Authors.

# NEEDS ASSESSMENT IN STUDENT AFFAIRS*

Oscar T. Lenning
National Center for Higher
Education Management Systems

Andrea C. McAleenan
Azusa Pacific College

*For a chapter in the monograph tentatively titled Evaluation in Student Personnel Work, Edited by George D. Kuh.

## Introduction

An important value that is a part of our culture is that all social institutions presumably exist to meet individual and group needs. This basic value is reflected in college student personnel work, which came into being as a profession solely to meet student needs. Students had needs in certain areas that were not being met adequately by colleges' instructional personnel. Furthermore, the instructional personnel had felt needs to devote their time exclusively to instruction. Thus, the term "extra-curricular" came into existence, which was largely viewed by the academic community as separate from and less important than formal curricular instruction.

By the 1960's, there were large numbers of college staff members primarily engaged in specialized services to students such as admissions, records, counseling, advising, orientation, housing, student out-of-class activities, learning skills assistance, living-learning centers, career education, and behavioral learning. In addition, needs for new types of specialized services--such as financial aid and honors program coordinators--were becoming more apparent. During the sixties, student personnel workers were advocating the position that the needs of students outside of the classroom were as important as the needs within the classroom, and that student activities and experiences within this arena could supplement, reinforce, and provide a "practice area" for testing and applying classroom learning to "real life" situations. Thus, the term "co-curricular" came into vogue within the profession, and even some academics came to acknowledge that the increased status implied by this term was warranted.

During the 1970's, field work and other off-campus experiences were increasingly becoming an integral part of the formal curriculum, and there were emerging concepts such as internships, cooperative education, and external degree programs. Increased numbers of academics were also

starting to acknowledge the importance of influencing the affective domain as well as the cognitive domain with their teaching. Furthermore, increasing numbers of non-traditional students with unique characteristics and educational needs (compared with those of traditional students entering college out of high school) were enrolling in postsecondary institutions. At the same time, many student affairs staff members were seeing their activities as an integral part of the curricular effort; with many of the out-of-class and in-class needs of students being very much inter-dependent. Student affairs personnel began to call themselves student development experts, and considered themselves a significant part of the total instructional team. The collaboration concept, where student development experts and other members of the faculty work together to promote student learning, has started to be viewed as the ideal goal to enhance total student development. (Miller & Prince, 1976).

As part of its continuing movement towards increased status and recognition within the college community, the student affairs profession has acknowledged the importance of evaluating whether significant student needs are being met by its activities and programs, or whether those needs could be more effectively met if modifications are made. Thus, during the seventies there has been increased emphasis within the profession regarding the importance of program evaluation. The need for more sophisticated mechanisims designed to provide more objective, systematic, and effective evaluation procedures is being advocated frequently by small-college and university staffs.

The evaluation literature generally acknowledges the importance of assessing needs as a prelude to or a part of systematic evaluation, but the procedures for such assessment are rarely explicated. It is as if needs assessment is an obvious and elementary process. To illustrate the lack of emphasis on needs assessment in the evaluation literature, we can refer to what is probably the largest and most comprehensive bibliography of evaluation references ever developed. Despite 603 entries in Bunda's (1976) Evaluation Bibliography, no mention of needs assess-

ment is made in the document. Yet, as discussed by Witkin (1975), needs assessment is a complex, difficult area that is largely undeveloped:

> The field is markedly and sadly lacking in almost any kind of research on the processes of needs assessment. There should be validity and reliability studies on instruments, as well as studies of the effects of different assessment processes and communication strategies on the educational system. Longitudinal studies are needed to trace the impacts of needs assessment on policy making, curricular change, organizational structure, and student performance. Cost/benefit comparisons of different approaches are needed. Studies might also be undertaken to test hypotheses generated by theoretical models, such as Kaufman's unity continuum . . . Few developers have shown how to relate such qualitative data as values, perceptions and concerns to such quantitative data as test scores, demographic data, and transiency and absentee rates. Yet until such techniques are widely available, educators will assign priorities and make decisions using one-dimension or over-simplified decision rules. [Pp. 7-8]

A somewhat similar statement can be made about assessing needs in the student affairs profession. Counselors and other student affairs staff members are generally quite knowledgeable and proficient in identifying and assessing important needs of their individual clients. Yet, when it comes to setting up programs for groups, the identification and assessment of group needs is often quite unobjective, unsystematic, overly simplistic, and often ineffective. Even when writers in student affairs do discuss needs assessment as a prerequisite to or part of evaluation, they tend to deal with it in an introductory fashion, as in Burck and Peterson's (1975) discussion of five recommended steps for good program development and evaluation. Of course, in student affairs there is an additional problem (which may also be a problem in other areas) in that little meaningful or systematic evaluation has been considered or attempted (Burck & Peterson, 1975).

Thus, a separate chapter on needs assessment has been included in this evaluation monograph. In this chapter, the concept of "need" will be clarified, and the importance of "which needs for whom" will be discussed, along with relevant classifications of needs that can be useful in planning student services needs assessment. Alternative approaches, strategies, techniques, and procedures having relevance for such assessment will also be examined.

## Whose Needs?

Before needs can be assessed, it is essential to ask the following question: Which specific groups' needs is it important to identify and understand for planning and evaluating a particular student affairs program? All students may have some needs in common that the program could help meet (e.g., the need for organized group recreational activities). On the other hand, various subgroups of students are likely to have different types and patterns of needs. For example, the following special groups of students have been found to have special counseling and/or other student service needs: commuting students versus resident students (Chickering 1974); environmentally handicapped students (Kapel, 1971); married students (Flores, 1974); minority students (Moore, 1970); students such as homemakers, military veterans, retirees, and retrainees (Cross, 1978; Lenning & Hanson, 1977); and physically handicapped students (Coffing, Hodson, & Hutchinson, 1973).

In order to effectively improve student affairs programs, it is also important to identify and assess the needs of particular non-student groups. For example, as a student affairs program planner and administrator, it is important to know whether one's staff members have adequate time with their clients; time for consultation with other staff, keeping up with the literature, writing case reports, doing client-centered research, reflection between client sessions, and for continuing education activities; adequate psychometric resources and other staff support; staff organization and functioning needs, etc. Other nonstudent groups who may have needs of concern for various types of student affairs programs include: the families of students, prospective students, high school counselors, alumni, dropouts, and the local community. For example, all of these groups have informational needs.

Which groups should be of concern in assessing needs depends on the student affairs program context or situation. For example, the institution's

size, purpose and mission, goals, and constituencies all have a direct bearing on identification of groups for focus. A comprehensive taxonomy of possible target groups in postsecondary education--that could possibly stimulate reflection regarding possible target groups for a needs assessment study--is presented in Figure 1. This taxonomy constitutes one dimension of the NCHEMS Outcomes Structure (Lenning, Lee, Micek, & Service, 1977).

---

Figure 1 goes about here

---

The importance of being concrete and specific about whose needs are of concern cannot be over-emphasized. For example, too many assessments of students needs have focused on "students in general" as their target group, with little or no subgrouping. (Once the specific student groups' needs have been identified and assessed, need similarities and discrepancies across groups can be examined and compared for general student needs.) In addition, it should be emphasized that target groups can be too specific in nature. Focusing separately on groups that are not that unique makes the needs assessment unduly cumbersome and may decrease the usefulness of the assessment data for planning purposes.

The taxonomy in Figure 1 may suggest important target groups that would otherwise be overlooked. To illustrate, the category titled "association communities" emphasizes that we should also be concerned about the needs of our profession, e.g., with the need for sharing our innovations, experiences, and research with our professional collegues throughout the country.

## Clarifying the Concept of Need

In most cases, needs assessment studies have been based on a discrepancy concept of need, such as the discrepancy between "what should be" and "what is currently the case." During the 1960's, process and procedural discrepancies between the actual and the ideal were generally included. However, since

Figure 1

# CATEGORIES OF PERSONS, GROUPS, AND OTHER ENTITIES OF POSSIBLE CONCERN IN ASSESSMENTS OF NEEDS[a]

10. *Individual/Group Clients*—This category refers to persons or groups of persons who are direct clients of the postsecondary education unit of concern and/or their immediate associates, such as family and relatives or peers.

    11. *Students*—Individuals or groups of individuals who currently are enrolled in the program, institution, or system of postsecondary education.

    12. *Former Students*—Individuals or groups of individuals who formerly were enrolled in the program, institution, or system of postsecondary education.

    13. *Family and Relatives of Students or Former Students*

    14. *Peers and Associates of Students or Former Students*

    15. *Faculty*

    16. *Staff Other than Faculty*

    17. *Other Individual/Group Clients*—An example would be an individual who is none of the above but is served by an advisory service offered by the college.

20. *Interest-Based Communities*—This category refers to large groups that are identified as entities working toward a *well-defined interest or mission.*

    21. *Private Enterprise Communities*—Communities where a major purpose is financial remuneration and profit—for example, corporations, small businesses, and farmers.

    22. *Association Communities*—Communities where members belong on the basis of affiliation rather than employment, such as unions and professional societies.

    23. *Government Communities*—Communities designed to administer government regulations and services, such as city hall, state department of education, and legislative communities.

    24. *Nongovernmental/Public Service Communities Other than the Institution Producing the Outcome*—Nonprofit service organizations, such as schools, hospitals, welfare agencies, philanthropic foundations, colleges (other than the college producing the outcome), and research organizations.

    25. *Institution or Institutional Unit Producing the Outcome*—The postsecondary education institution and/or units within that institution that are perceived as the producer/facilitator of the outcome(s) of concern.

    28. *Other Interest-Based Communities*—An example would be an ad hoc coalition task force of representatives from two or more of the above areas.

30. *Geographic-Based Communities*—This category refers to large groups defined on the basis of *functional territorial boundaries.*

    31. *Local Community*—A township, city, county, metropolitan area, or other type of locality having particular boundaries. It is not necessarily restricted to the legal or jurisdictional boundary, but the functional one in which the impact of the institution is (or should be) directly and physically felt. The boundaries will vary with the institution/program and outcome of concern.

    32. *The State*

    33. *A Region*—An aggregation of states or parts of states.

    34. *The Nation*

    35. *An International Community*

    38. *Other Geographic-Based Communities*—An example would be a research discovery that affects primarily people living in the coldest latitudes, or where it snows heavily.

40. *Aggregates of People*—This category refers to subpopulations of people *distinguished by particular characteristics that may indicate common concerns, needs, or wants,* but who do not necessarily have a common interest or mission, and therefore do not constitute communities.

    41. *Ability Level Subpopulations*—Subpopulations defined according to level of ability/proficiency on general intellectual functioning or specific skills—for example, gifted, typical, disadvantaged, or skilled, semi-skilled, unskilled.

    42. *Age Subpopulations*

    43. *Educational Level Subpopulations*

    44. *Income Level Subpopulations*

    45. *Occupation Subpopulations*

    46. *Physical Disability Condition Subpopulations*

    47. *Race Subpopulations*

    48. *Sex Subpopulations*

    49. *Other Such Aggregates*

50. *Other Audiences*—Examples would be the natural environment that is affected by university-sponsored research (which in turn would be expected to have impacts on audiences such as individuals and communities) and populations of animals (such as the animals affected by efforts to keep depleted species from becoming extinct or by the development of veterinary medicines).

---

[a]Reprinted from Lenning, Lee, Micek, and Service (1977, p. 24), where the focus was on "audiences"--individuals, groups, communities, organizations, etc. receiving or being affected by particular outcomes of concern. This taxonomy constitutes the "audience dimension" of the NCHEMS Outcomes Structure.

BEST COPY AVAILABLE

Kaufman, Corrigan, and Johnson (1969), the focus in the needs assessment literature has tended to be entirely on discrepancies in outcomes or results.

More recently, some discussion has centered on whether a discrepancy concept of need is adequate or necessary for an effective and productive needs study. Scriven (1977), for example, refers to such a definition as the primary reason that the needs assessment models employed in the past by evaluators "are farcical and decisions based on them are built on soluable sand [p. 25]." One problem with the discrepancy concept of need is that it has led many needs assessors to equate wants or demands with needs. Wants may very well be indicators of the presence of need, and especially if they turn to demands or expressions of anguish, but there still may not be needs present. For example, people may want or demand something merely because others have it, because it will attract attention, or to keep others from getting it. In other words, the real need may not be the expressed need. Conversely, people may have needs and not realize them, or they may recognize the need but not be willing to act upon what the need implies. For example, a student may recognize the need for counseling but not want to request it, or be unwilling to take the necessary steps to follow through on the counselors suggestions and insight.

It is important to identify and analyze wants and demands in an assessment of need. However, most program needs assessments have not gone beyond that; they have equated wants and demands with needs. Needs assessors should use any additional evidence that they can find, or develop, to help them determine whether the wants and demands indicate "real needs" and whether other needs are present.

Another problem with the discrepancy or deficiency definition occurs when the need has been fulfilled. In discrepancy-based needs assessment, "met needs" are not considered to be needs, even if the deficiency would reoccur were the support withdrawn that has helped the need to be fulfilled. Assessments of

need by student affairs personnel should identify and assess target group met needs as well as unmet needs, so that they are prepared to act should conditions change and deficiencies appear in those areas of current fulfillment. Or, to use the terms of Scriven (1971), they should focus on maintenance needs (need for "lots") as well as incremental needs (need for more).

Scriven (1977) makes the additional point that just because someone would benefit from something does not mean it is a need. For example, a gift of one million dollars would benefit most people; but having less than a million dollars would not put most people into an "unsatisfactory condition." According to this view, a need is present only when an unsatisfactory condition exists or would exist if the need were not being met. But who decides what is an unsatisfactory condition, and what criteria should be used in making that judgment?

A "need," as defined in this paper, is a combination of discrepancy and level of necessity. The amount of both components should be judged by a relevant person or group using multiple objective criteria and methodologies that have been mutually agreed upon. The relevant person or group to determine and apply the criteria of when the necessity and discrepancy constitute need, and the point at which needs are partially or fully met, depends on the situation and context. However, it is important to remember that the amount of need varies directly with both the level of necessity and the amount of discrepancy--the same amount of necessity with increased discrepancy means greater unmet and overall need, and vice versa. Furthermore, as Burton and Merrill (1977) have suggested, unmet needs can be met by lowering the threshold of necessity, closing up the discrepancy (overcoming the deficiency), or a combination of both. For example, a student affairs professional's need to publish a study can be reduced by lowering the expectations of the profession concerning publications, or by the person completing and publishing a study.

## What Need? With What Types of Needs Should We Be Concerned?

For any individual or group, there are many different needs that could be of concern. The next question concerns which types of need are most important to identify and assess for the person or group, and program.

In their review of the literature on needs and needs assessment, Lenning, Cooper, and Passmore (submitted for publication) identified a number of categorizations of need. Many of these categorizations are pertinent to the concerns of student affairs members and can stimulate thinking regarding the process of making decisions about which needs to attempt to assess for different target groups.

An early classification of needs was developed by Murray et al. (1938) based on interviews with paid college student males at Harvard. Their work stimulated the development of various need for achievement or achievement motivation and need for affiliation scales. Some of these scales were objective and some projective in nature. Murray postulated twenty manifest (leading to overt action) and eight latent (not leading to overt action but to action imagination and fantasies) needs.

Maslow's (1954) need hierarchy is another classification of needs that has greatly influenced student affairs professions. According to Maslow, needs at a particular level cannot be met until those lower in the hierarchy have been satisfied. There have been a number of potentially useful attempts to operationalize Maslow's formulation, such as the one by Groves, Kaholis, & Erickson (1975).

Developmental tasks related to maturity and chronological age in which earlier tasks must be mastered or accomplished before individuals can move on to further tasks suggest a different set of needs. For example, Cronbach (1963) referred to several basic needs including: affection, adult approval, peer approval, independence, and competence and self respect. In an earlier and

more extensive formulation, Havighurst (1952) identified ten primary ordered developmental tasks for adolescents, eight for early adulthood, seven for middle age, and six for later maturity.

It is also possible to examine needs in terms of classifications of goals. For example, Beatty (1976) has related needs to goal-state continua. Her prescriptive (or ascribed) needs for individuals are determined by societal norms and standards, while her motivational needs are determined by the individual's goals. Lenning (1977a) has compiled numerous classifications of educational goals found in the literature for individuals, society, and individuals plus society. In some the categories are very detailed and narrow in focus, while in others the categories are broad.

Related to goals are outcomes. As mentioned earlier, needs assessment studies have generally focused on needs in terms of outcomes or results. For example, Chickering (1969) identified seven developmental vectors for college students, each of which had two or more subcategories of outcomes: autonomy, competence, identity, integrity, interpersonal relationships, managing emotions, and purpose. Bowen's (1977) identification of numerous types of long-term impacts on graduates and society is another example. Figure 2 shows a generic, neutral, and comprehensive taxonomy of types of possible outcomes that is is believed could apply to any of the target group categories of Figure 1. Many of those types of outcomes could potentially constitute important student affairs program needs.

---

Figure 2 goes about here

---

Environmental needs and the processes needed to bring about the desired outcomes in this area must also be considered. For example, Chickering (1969, 1974), Aulepp and Delworth (1976), and Baird (1976) have discussed educational environmental factors and processes that can best bring about particular types of student outcomes. In addition, Lenning et al (1974a, 1974b) compiled a compre-

Figure 2

CATEGORIES AND SUBCATEGORIES OF OUTCOMES IN THE TYPE-OF-OUTCOME DIMENSION OF THE NCHEMS OUTCOMES STRUCTURE[a]

| Category Code Number | Entity Being Maintained or Changed |
|---|---|
| 1000 | *ECONOMIC OUTCOMES* |
| 1100 | Economic Access and Independance Outcomes |
| 1110 | Economic Access |
| 1120 | Economic Flexibility, Adaptability, and Security |
| 1130 | Income and Standard of Living |
| 1200 | Economic Resources and Costs |
| 1210 | Economic Costs and Efficiency |
| 1220 | Economic Resources (including employees) |
| 1300 | Economic Production |
| 1310 | Economic Productivity and Production |
| 1320 | Economic Services Provided |
| 1400 | Other Economic Outcomes |
| 2000 | *HUMAN CHARACTERISTIC OUTCOMES* |
| 2100 | Aspirations |
| 2110 | Desires, Aims, and Goals |
| 2120 | Dislikes, Likes, and Interests |
| 2130 | Motivation or Drive Level |
| 2140 | Other Aspirational Outcomes |
| 2200 | Competence and Skills |
| 2210 | Academic Skills |
| 2220 | Citizenship and Family Membership Skills |
| 2230 | Creativity Skills |
| 2240 | Expression and Communication Skills |
| 2250 | Intellectual Skills |
| 2260 | Interpersonal, Leadership, and Organizational Skills |
| 2270 | Occupational and Employability Skills |
| 2280 | Physical and Motor Skills |
| 2290 | Other Skill Outcomes |
| 2300 | Morale, Satisfaction, and Affective Characteristics |
| 2310 | Attitudes and Values |
| 2320 | Beliefs, Commitments, and Philosophy of Life |
| 2330 | Feelings and Emotions |
| 2340 | Mores, Customs, and Standards of Conduct |
| 2350 | Other Affective Outcomes |
| 2400 | Perceptual Characteristics |
| 2410 | Perceptual Awareness and Sensitivity |
| 2420 | Perception of Self |
| 2430 | Perception of Others |
| 2440 | Perception of Things |
| 2450 | Other Perceptual Outcomes |
| 2500 | Personality and Personal Coping Characteristics |
| 2510 | Adventurousness and Initiative |
| 2520 | Autonomy and Independence |
| 2530 | Dependability and Responsibility |
| 2540 | Dogmatic/Open-Minded, Authoritarian/Democratic |
| 2550 | Flexibility and Adaptability |
| 2560 | Habits |
| 2570 | Psychological Functioning |
| 2580 | Tolerance and Persistence |
| 2590 | Other Personality and Personal Coping Outcomes |
| 2600 | Physical and Physiological Characteristics |
| 2610 | Physical Fitness and Traits |
| 2620 | Physiological Health |
| 2630 | Other Physical or Physiological Outcomes |
| 2700 | Status, Recognition, and Certification |
| 2710 | Completion or Achievement Award |
| 2720 | Credit Recognition |
| 2730 | Image, Reputation, or Status |
| 2740 | Licensing and Certification |
| 2750 | Obtaining a Job or Admission to a Follow-up Program |
| 2760 | Power and/or Authority |
| 2770 | Job, School, or Life Success |
| 2780 | Other Status, Recognition, and Certification Outcomes |
| 2800 | Social Activities and Roles |
| 2810 | Adjustment to Retirement |
| 2820 | Affiliations |
| 2830 | Avocational and Social Activities and Roles |
| 2840 | Career and Vocational Activities and Roles |
| 2850 | Citizenship Activities and Roles |
| 2860 | Family Activities and Roles |
| 2870 | Friendships and Relationships |
| 2880 | Other Activity and Role Outcomes |
| 2900 | Other Human Characteristic Outcomes |
| 3000 | *KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOMES* |
| 3100 | General Knowledge and Understanding |
| 3110 | Knowledge and Understanding of General Facts and Terminology |
| 3120 | Knowledge and Understanding of General Processes |
| 3130 | Knowledge and Understanding of General Theory |
| 3140 | Other General Knowledge and Understanding |
| 3200 | Specialized Knowledge and Understanding |
| 3210 | Knowledge and Understanding of Specialized Facts and Terminology |
| 3220 | Knowledge and Understanding of Specialized Processes |
| 3230 | Knowledge and Understanding of Specialized Theory |
| 3240 | Other Specialized Knowledge and Understanding |
| 3300 | Research and Scholarship |
| 3310 | Research and Scholarship Knowledge and Understanding |
| 3320 | Research and Scholarship Products |
| 3400 | Art Forms and Works |
| 3410 | Architecture |
| 3420 | Dance |
| 3430 | Debate and Oratory |
| 3440 | Drama |
| 3450 | Literature and Writing |
| 3460 | Music |
| 3470 | Painting, Drawing, and Photography |
| 3480 | Sculpture |
| 3490 | Other Fine Arts |
| 3500 | Other Knowledge, Technology, and Art Form Outcomes |
| 4000 | *RESOURCE AND SERVICE PROVISION OUTCOMES* |
| 4100 | Provision of Facilities and Events |
| 4110 | Provision of Facilities |
| 4120 | Provision or Sponsorship of Events |
| 4200 | Provision of Direct Services |
| 4210 | Teaching |
| 4220 | Advisory and Analytic Assistance |
| 4230 | Treatment, Care, and Referral Services |
| 4240 | Provision of Other Services |
| 4300 | Other Resource and Service Provision Outcomes |
| 5000 | *OTHER MAINTENANCE AND CHANGE OUTCOMES* |
| 5100 | Aesthetic-Cultural Activities, Traditions, and Conditions |
| 5200 | Organizational Format, Activity, and Operation |
| 5300 | Other Maintenance and Change |

[a]Reprinted from Lenning, Lee, Micek, and Service (1977), page 27. The fourth-level Categories, into which any of the categories listed here can be divided, are "maintenance" (a fourth digit of "1") and "change" (a fourth digit of "2").

hensive review of nonintellective factors found in the literature to correlate with various types of educational outcomes, such as student grades, persistence, motivation, attitudes and values, social skills and participation, and confidence and self concept.

Needs can also be related to problems. For example, each of the 11 problem areas for which the college student form of the Mooney Problem Check List (Mooney and Gordon, 1950) has scales can imply particular needs: (1) health and physical development, (2) finances-living condition-employment, (3) social and recreational activities, (4) social-physical relations, (5) personal-psychological relations, (6) courtship-sex-marriage, (7) home and family, (8) morals and religion, (9) adjustment to school work, (10) the future-vocational and educational, and (11) curriculum and teaching procedures. The same is true of the "adult" form of the check list, which has the following nine scales: health, economic security, self-improvement, personality, home and family, courtship, sex, religion, and occupation. Related to the above, but coming at it from the opposite direction, Campbell and Markle (1967) developed techniques for transforming educational needs into well-defined problems. They contend that educators need carefully designed problem-formulation training in order to translate needs to problems effectively.

Bradshaw (1972) and Burton and Merrill (1977) have proposed an additional typology of needs that could be useful in student affairs programming. The categories in this typology are: (1) normative needs, (2) felt needs, (3) expressed needs, (4) comparative needs, and (5) anticipated or projected needs.

Still another potentially useful classification of need for student services consists of basic (primary, root, or underlying) human needs versus secondary (derived, learned, or deduced) needs. Monette (1977) has labeled these two categories "innate needs" and "acquired needs."

## What Approaches and Procedures Should Be Used for Conducting Student Affairs Needs Assessments?

Conducting needs assessment is an important activity related to student affairs program evaluation. Few suggestions have been put forward as to how such assessments can systematically and effectively be carried out within student affairs, however, expecially for assessing target group needs. This section will discuss how to conduct such assessments, with the focus first being on the assessment of individual needs and then on the assessment of group needs.

### Assessing Individual Needs

Since the student development profession emerged out of a recognition of the students' needs outside of the area of intellectual achievement, any program designed to identify the needs of individual students more effectively is clearly of central importance. Assessment procedures utilized in this context can assist a student in identifying current needs and clarifying strategies for future change. Data relating to individual personality characteristics, perceptions, values, goals, and interests can provide a framework upon which a student can move towards continual growth and development.

One such needs clarification model was initiated at Azusa Pacific College as a means of enhancing planned growth among individual students. The strategy was formulated as part of a research project conducted by graduate students in the M.A. in Social Science with an Emphasis in Student Development program during Spring 1977. It was initiated on a pilot project basis during the 1977-78 academic year. Graduate students in Student Development experimented, experienced, and revised the procedures based on a two-semester, three credit course.

The major components of the project will be described in this section as an example of a needs clarification procedure. In the first step, a conceptual

framework for the project was created by examining various developmental and learning theories. Chickering's (1969) seven vectors of development for college students were instrumental in identifying the six-stage model that was adopted. The areas chosen for examination of personal needs among college students included: Personal/Emotional, Social/Interpersonal, Intellectual/Cognitive, Values/Religious Orientation, Career/Life Planning, and Physical Fitness.

The next step involved the selection of appropriate assessment tools for each of the six areas. Criteria for selecting the best available assessment tools were established as follows:

1. Assessment tools should measure each area of need in terms of a clearly defined conceptualization of that need. The tool must lend itself to evaluating the area of need perceived.
2. A comparative analysis should be made between the alternative assessment tools taking into consideration these factors:
   - Degree of congruence between stated purpose of instrument and the needs assessment/clarification purpose.
   - Availability of appropriate instrument.
   - Research data regarding the instrument's validity, reliability, and standardization.
   - Data concerning successful usage by others for similar purposes based on recommendations, interviews and research.
   - Costs involved--Funds available.

For the experimental model purposes, particular assessment instruments were chosen for each of the six areas of student development as follows: Personal/Emotional (California Psychological Inventory), Social/Interpersonal (Fundamental Interpersonal Relations Inventory), Values/Religious Orientation ("The University of Wisconsin Survey Instrument and University and Society:

Student Perspectives" and selected values clarification exercises), Yourself Halfway and Values Clarification), Cognitive/Intellectual (Omnibus Personality Inventory and Learning Styles Questionnaires), Career/Life Planning (Hall Occupational Orientation Inventory), and Physical Fitness (3 Day Food Intake Analysis, 1.5 Mile Running Test, 1 Minute Sit-up Test, Trunk Flexion and Extension Tests, Skin Fold Test).

In order for the student to gain significant insight into his or her own development, and to consequently be able to establish personal goals, it is necessary that the assessment process include more than collection of data. Data must be interpreted to the student and guidelines provided to help the student utilize insights gained from the personal needs and developmental goals clarification process.

After examining other needs assessment programs with similar goals, a five-part sequential plan was formulated to facilitate the process of clarifying student needs. It is important to note that a variety of procedures can be utilized as background preparation for each of the assessment areas. Pertinent bibliographic materials should be included that will provide students with background information as well as material for future references.

1. Data Collection

   The first stage in needs assessment should include an explanation of the need(s) being measured, the instrument(s) to be utilized and the objective(s) that are to be realized after the progress is complete for each individual area.

2. Scoring

   The second stage consists of obtaining test results. Scoring methods include: machine, professional psycomotrist or counselor, or self scoring.

3. Interpretation

The third stage is the most crucial aspect of assessing individual-student needs. It involves communicating the test results to the student so that self-understanding is increased. Interpretation techniques vary according to the nature of the instrument used and the need being assessed. Techniques may involve the student using a test manual as a guide to interpret test scores or an individual interview or small group discussion with a counselor, faculty member, or paraprofessional who is competent in testing.

4. Goal Setting

The fourth stage of individual-student needs assessment in actuality is a significant factor in determining the success of the previous stages. Assuming that the student has gained increased self-understanding through the previous stages, this stage should assist the student in adapting insights and formulating developmental goals based on that understanding. The degree to which this is accomplished determines in large part the success of the assessment program. Again, the means used to accomplish this goal setting stage will vary according to the needs assessed and instrument(s) used. One helpful device may be the use of an individualized worksheet or workbook. (Deddo and Thuveson, 1977)

5. Evaluation

The final stage of the needs assessment program involves evaluation of the process from the student's perspective. This enables the student to reflect and react regarding the aspects of each area assessed. In terms of the goals stated, to what degree did the process actually impart insight to the student concerning his/her own development? In addition to providing a sound basis for future development, this information should be utilized by staff for revision of the assessment program.

It is recommended that some sort of evaluation questionnaire be administered to each student in order to facilitate feedback in pertinent areas of concern. (McAleenan and Deddo, submitted for publication).

A schematic representation of this procedural model for student needs clarification is shown in Figure 3.

---

Figure 3 goes about here

---

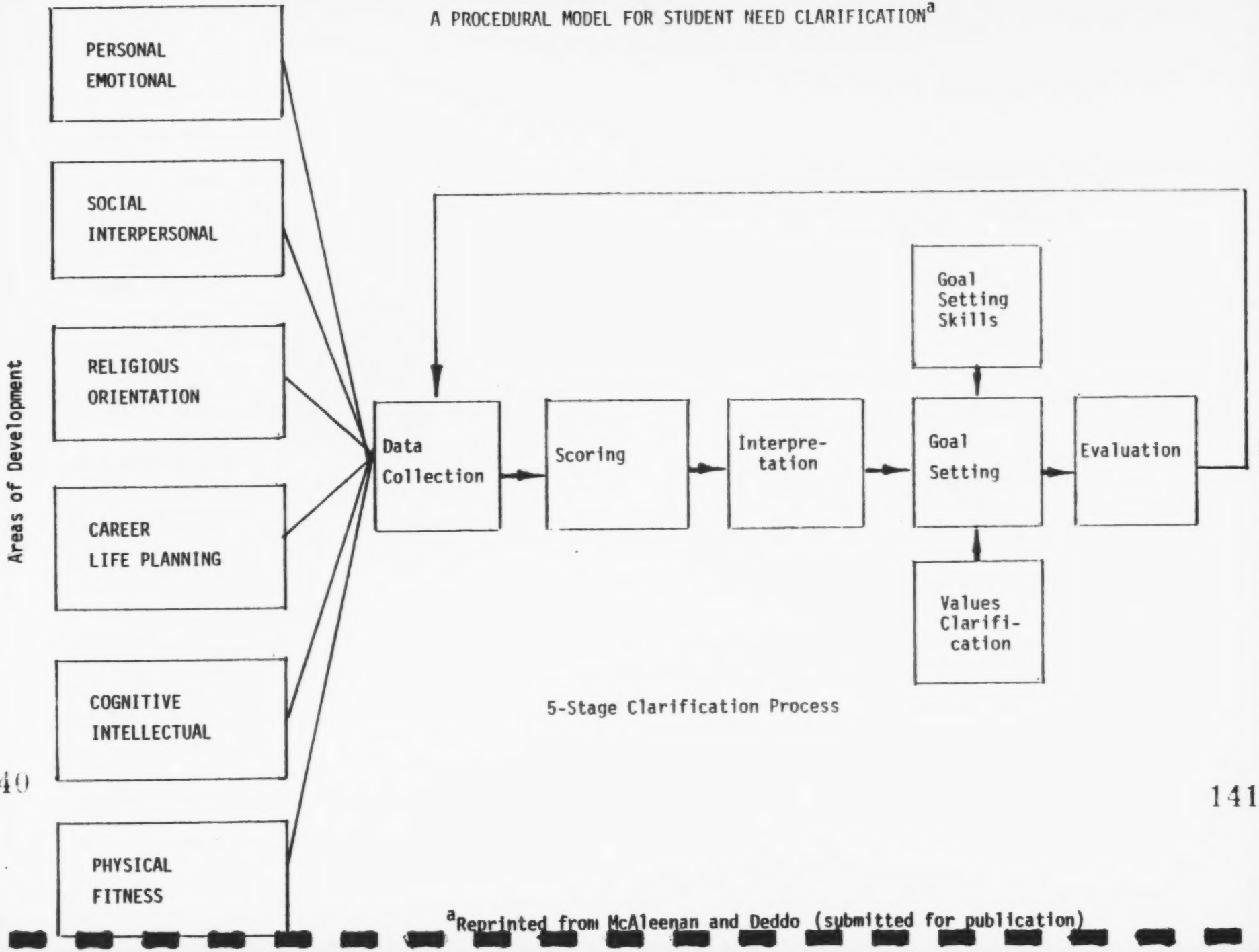
The length of time, availability of staff, resources and cost are all factors that need to be taken into consideration in adopting such a program. Based on student evaluation of the pilot project at Azusa Pacific College, it is important to note that the interpretation phase is often complex and time consuming. Test data results often vary from a student's previously held assumptions and beliefs. This experience can be highly threatening and often requires time for analysis and synthesis through the help of a peer group and/or staff member. The amount of discrepancy and level of necessity for resolving the need are complex variables that must be carefully digested in order to be acted upon appropriately. The mere acquisition of new data is not enough to promote student growth on an individual basis.

Students must be guided through a process of integrating new information with previously held values. Students affairs professionals and paraprofessionals have a clear responsibility to follow a student through all the stages of an assessment process. This may also necessitate establishing workshops on goal setting techniques since students rarely have had experience in the process of setting personal goals.

Assessing the needs of individual student affairs staff members is also a dimension of evaluation that must be examined. As with student assessment, a

Figure 3

A PROCEDURAL MODEL FOR STUDENT NEED CLARIFICATION[a]




[a]Reprinted from McAleenan and Deddo (submitted for publication)

system for interpretation, reflection, and discussion regarding data must be included. A strategy such as the one outlined for students can also be utilized effectively with staff, on an individual or group basis. Another example of a viable system for assessing staff member needs is outlined in a monograph by Kiersy and Bates (19 ) entitled Results Systems Management. It is an effective procedure to assist staff in identifying priorities and individual goals for personal and professional growth during a given month, semester, or school year.

## Assessing Target Group Needs

Although some of the considerations and activities are the same or similar, assessing group (program) needs involves different processes than assessing the needs of an individual. First we will discuss how group needs information can be applied to student affairs program evaluation, planning, and policy formulation. Next, various overall approaches and orientations to assessing group needs will be surveyed.

Group Needs Assessment Application. A primary purpose for assessing group needs in student affairs is to provide input and guidance for program planning, management, and evaluation decisions, including policy formulation. Figure 4 presents a graphical overview of a general framework for program planning, management, and evaluation that illustrates how needs assessment fits into the total enterprise. In this framework, constituent (e.g., students and student affairs staff) needs are identified and assessed. Needs assessment

---

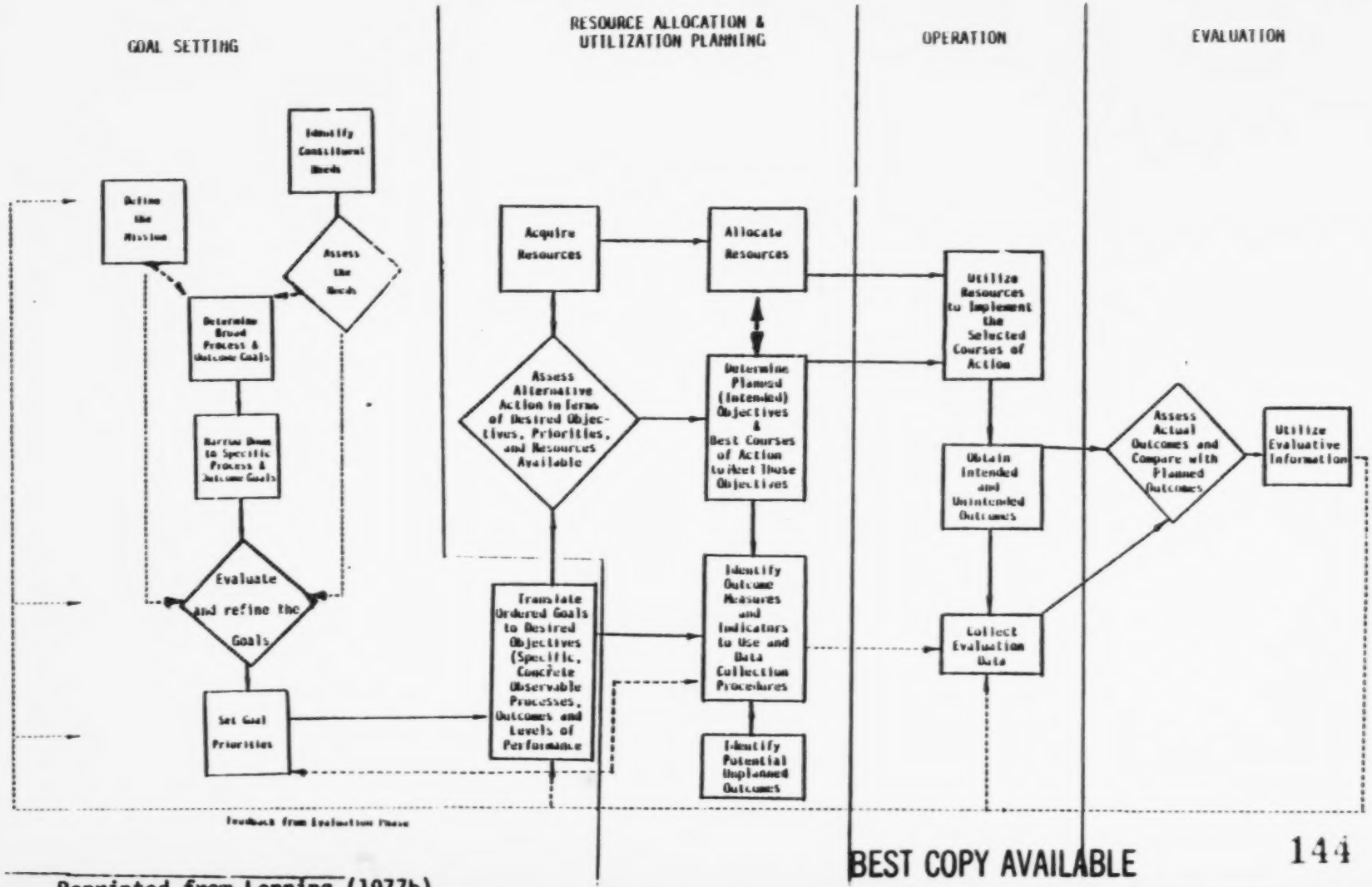
Figure 4 goes about here

---

results are used to aid in the process of acquiring resources for the program (funding agencies and financial management people must be convinced the resources are needed). Furthermore, the needs and need priorities determined

Figure 4

ONE POSSIBLE FRAMEWORK FOR PROGRAM PLANNING, MANAGEMENT, AND EVALUATION


GOAL SETTING
RESOURCE ALLOCATION & UTILIZATION PLANNING
OPERATION
EVALUATION
Identify Constituent Needs
Define the Mission
Assess the Needs
Determine Broad Process & Outcome Goals
Narrow Down to Specific Process & Outcome Goals
Evaluate and refine the Goals
Set Goal Priorities
Acquire Resources
Allocate Resources
Assess Alternative Action in Terms of Desired Objectives, Priorities, and Resources Available
Determine Planned (Intended) Objectives & Best Courses of Action to Meet Those Objectives
Translate Ordered Goals to Desired Objectives (Specific, Concrete Observable Processes, Outcomes and Levels of Performance
Identify Outcome Measures and Indicators to Use and Data Collection Procedures
Identify Potential Unplanned Outcomes
Utilize Resources to Implement the Selected Courses of Action
Obtain Intended and Unintended Outcomes
Collect Evaluation Data
Assess Actual Outcomes and Compare with Planned Outcomes
Utilize Evaluative Information
Feedback from Evaluation Phase

Reprinted from Lenning (1977b)

BEST COPY AVAILABLE

in the needs assessment, are examined in light of the mission of the institution and of the program, and broad outcome and process goals are generated. (Unmet needs will suggest improvement types of goals while met needs will suggest maintenance types of goals). The goals are now transformed into more specific goals. Next the needs and their context (e.g., their root causes and analyzed amenability to solution) will provide input for evaluating the goals, refining them, arriving at goal priorities, and transforming each goal to specific and concrete desired objectives that can directly guide planning. The objectives, in the light of what we know about the needs, their priorities, and their contexts, are then applied to evaluating alternative courses of action, activities, and processes. Best courses of action and activities to meet the needs/goals/objectives are then formulated, interaction with resource providers and allocators takes place, resources are allocated and reallocated, and final objectives are planned. Then, the process objectives are carried out in ways that are continually ameliorated by what is known about the needs and outcome goals determined originally, and evaluative data are collected. Finally, evaluation activities are conducted to determine whether the needs and goals are being met, how effectively they are being met, and what improvements are needed.

This discussion has focused separately on each step of the planning, management, and evaluation process outlined in Figure 4. As indicated by the dotted lines extending back to each preceding phase from the evaluation phase, in that diagram, it is a cyclical process that repeats itself periodically, with the evaluation phase providing helpful feedback to the next iterations of the earlier phases. Knowledge about program constituent needs is thus related directly to earlier evaluation results, and interpreted accordingly.

Group Needs Assessment Orientation and Approaches. A number of group needs assessment models or approaches have been developed for use in the educational setting, many which have practical implications for conducting assessments of student affairs program needs. Some are primarily subjective in their measurement and analytic approach while others are primarily objective. Some use only data collected for the study, while others make use of secondary data analysis. Although most models developed up until now focus entirely on discrepancy need, this is not true of all of them (e.g., Coffing & Hutchinson's model [1974]).

Some approaches are interactive in nature (the process includes much interactive and direct involvement by the people whose needs are being assessed) while others only involve constituent groups in providing self-reports of needs. Similarly, there are approaches that rely only on self-report and those that rely mainly on other data. In addition, some approaches use multiple measures, sources of data, and data collection methods, as constrasted to models relying on unitary measures, sources of data, and collection methods.

Some needs assessment approaches are goal-driven (needs are searched out in terms of what is intended for the program ), while others have "goal-free" aspects that allow other needs to also come to the fore which allows needs data to assist in evaluating, developing, and refining goals. Interpretation in the first type of approach is deductive in nature; it is inductive in the second type of approach. Concerning the goal-driven approaches, some relate needs to the goals of the constituents or clients while others relate needs to the goals of the educators or student affairs staff members implementing the program. Some models include goal setting as a part of the needs assessment process while others (such as the framework of Figure 4) view goal-setting as a separate process to which the needs assessment effort provides input.

Some group needs assessment approaches have a diffused breadth of focus and identify general needs ("wide-band" study), while many needs assessment approaches in postsecondary education are specialized and specific in their focus and identify detailed needs ("narrow-band" study). Some approaches only identify needs, others also determine need priorities, and a few attempt to provide meaningful understanding about the needs and why they exist. Some approaches limit their attention to identifying and assessing current needs, while others concentrate on projecting future needs.

Group needs assessment approaches can also be differentiated according to the way that they are applied to determining program priorities and to decision-making. Some apply one-dimensional decision roles, while others use multiple and concurrent thresholds. Some use simple and rough decision techniques while others make use of sophisticated optimization procedures. Some integrate the various data while others consider each type of data separately.

A word should also be said about three types of approaches differentiated by Scriven (1977). The first two are discrepancy models--the first focusing on discrepancies in personal perceptions of "what is" and "what should be," and the second focusing on the discrepancy between "what is" for this group and the average or norm for some aggregate such as across the state or nation. Scriven castigates both of these approaches. Instead he favors the medical model, which examines changes in conditions when deprivation occurs. He also makes a useful distinction between what he calls "performance deficits" and "treatment deficits" (treatment needs implied by the existence of performance deficits). Scriven cautions that special care must be taken when deciding whether there is a treatment deficit and what the deficit involves. For example, a finding that fifty percent of the students entering a college are dropping out during the first term (performance

deficit) can imply a large number of potential treatment deficits (inadequate information is being provided to prospective students, admissions counseling is lacking, orientation program inadequacies, insufficient publicity available for student services resulting in nonusage, student program services and staff inadequacies, instructional-related dissatisfactions, etc.).

Conducting Group Needs Assessment. The conceptual discussion earlier, plus what was reported in the preceding subsections of this section, suggest a number of "good practice" procedures for assessing needs. Furthermore, various procedural handbooks and manuals that give step-by-step procedures for conducting group needs assessments have been developed. Those that seem most pertinent to group needs assessment in student affairs (some focusing on enrolled student needs and some on nonstudent needs) include: American College Testing Program (1976), Aulepp and Delworth (1976), Hays and Linn (1977), Higher Education Management Institute (1977), Lenning and Cooper (1978), and Mager and Pipe (1970). A review of English and Kaufman (1975), Coffing and Hutchinson (1974), and Witkin (1975) could also prove helpful.

1. The first step in planning for and conducting an assessment of student affairs program needs (group needs) is to decide on and outline the specific purposes, objectives, uses and users to be served by the assessment. Among other things, this should involve soliciting input on this topic from representatives of a wide array of constituents and potential users of the information to be generated by the study.
2. The second step is to determine exactly which populations and groups should be of concern for the specific program in question. Groups and subgroups should be carefully defined. Start first with those student subgroups currently being served, according to program records. Then try to think of other groups, students and otherwise that should be served by the program, but haven't been served.

3. Third, decide which particular groups identified in 2 are feasible to study at this point in time and which groups should be studied in a later year. (Costs, funds available, and staff resources and time should be considered carefully in making these decisions.) For each group and subgroup selected for focus, try to develop a preliminary understanding of each, and the needs of its members, through preliminary open-ended interviews within each group, and with pertinent others (such as instructors in the case of students).

4. Based on the stated purposes and mission of the program, and information gathered in Steps 1-3, decide on the types of needs that should especially be of concern for each group, in the study.

5. Considering usefulness, validity, and reliability of the data, select multiple measures or indicators and data collection sources and procedures appropriate for each type of need. (The instruments used do not need to be as reliable as those for use in assessing individual needs to still be useful; whereas, a test instrument for individual use should have reliabilities above 0.8, they can be as low as 0.6 for group use and have adequate reliability.) Some of the data from instruments will be "hard" (objective, accurate, and reliable measures) while other useful data will be "soft" (subjective, perceptual, not fully reliable or clear cut in what is being measured). Multiple measures and data collection methods are desirable, whenever feasible, because where one is weak another may be strong, and vice versa. In addition to psychometric tests, survey questionnaires, or interviews, additional methods should be considered for gathering data. Lenning (1978) found almost 50 such additional methods mentioned in the literature that have been found by various professionals to be useful and feasible for particular uses and contexts; and most of them could be applicable

in specific situations to assessing student affairs needs. "Secondary data"-- data such as in institutional or community records that are already available (collected for other purposes)--should also not be overlooked. A group of them examined simultaneously could yield effective unobstrusive (non-direct) measures that suggest the presence or absence of particular needs.

6. Test out the instruments, procedures, and methods, using a few members of each group, and modify as indicated. Next collect the planned data.

7. Analyze the data, in common-sense, logical ways that will suggest what needs are present. This includes the computation of simple statistics such as frequencies, percentages, means, and standard deviations; and the use of simple statistical tests such as t-tests and chi-squares. (Frequency patterns are as important as averages, because change may be up for some individuals at the same time it is down for other members of the group.) It also involves integrating different types of data, including hard and soft data, and conducting profile analyses for examination of similarities, discrepancies, and patterns (see the model for assessing guidance needs developed by the American College Testing Program [1976] for an effective graphical way of doing this). Sophisticated analyses such as multiple repression analysis, analysis of variance, analysis of co-variance, and discriminant analysis can be very helpful, but will often not be necessary. The needs identified will need to be rank ordered through applying multiple criteria such as amount of necessity, how vital is the area of need for effective functioning, the amount of discrepancy, etc. In addition, through profile analysis and logic, hypotheses that can help in providing an understanding of the probable reasons for the occurrence of the various needs should be formulated.

8. Interpret the results and communicate them to those identified in the beginning as users of the needs assessment results. Separate brief, concise reports tailored to each pertinent decision maker's (or type of decision maker) needs that speak to specific problems of concern to him/her should be prepared and distributed to those persons.

## Conclusion

Although most needs assessment models have defined needs as discrepancies between "what should be" and "what currently exists," it is more helpful to think of needs in terms of a combination of discrepancy and necessity where there are both met and unmet needs. The amount of need should be judged by a relevant person or group using multiple objective criteria and methodology that have been mutually agreed on.

Needs assessment of individuals is designed to raise awareness and provide guidance for a particular person concerning his or her own development or advancement, or for individuals who are working with or providing guidance to that individual. Needs assessment of groups, on the other hand, is designed to guide the development and improvement of programs--including planning, management, and evaluation decisions, and policy formulation. Group need data in conjunction with program mission information are also an aid in the process of acquiring resources for the program. Although they are similar in overall concept, the strategy and techniques for conducting needs assessment of individuals and of groups differ operationally.

The purpose of evaluation is to determine whether or not defined goals are being met and how they can be better met. If the goals are not being met adequately, the goals themselves or the ways of meeting them may be redefined as necessary, based on the findings. But underlying it all should be needs

assessment. Adequate needs assessment procedures can ensure that the evaluation process begins on the proper basis. To reiterate, it is important to note that needs assessment is an important component of the total evaluation process. The use of needs assessment techniques can enhance the value and benefits of that process. Program evaluation results are not very useful unless they can be related to needs.

## REFERENCES


American College Testing Program. River city high school guidance services: A conceptual model. Iowa City, Iowa: Author, 1976.

Aulepp L., & Delworth, U. Training manual for an ecosystem model: Assisting and designing campus environments. Boulder, Colo.: Western Interstate Commission for Higher Education, 1976.

Baird, L.L. "Structuring the Environment to Improve Outcomes." In O.T. Lenning (ed.) Improving Educational Outcomes: New Directions for Higher Education. San Francisco: Jossey-Bass, 1976.

Beatty, P.T. A process model for the development of an information base for community needs assessment: A guide for practitioners. Paper presented at the annual meeting of the Adult Education Research Conference, Toronto, April, 1976. ED 128 616.

Bowen, H.R. Investment in learning. San Francisco: Jossey-Bass Publishers, 1977.

Bradshaw, J. The concept of social need. New society. March, 1972, 640-643.

Bunda, M.A. (Ed.). Evaluation bibliography. Kalamazoo, Mich.: Evaluation Center, College of Education, Western Michigan University, November, 1976.

Burch, H.D., & Peterson, G.W. Needed: More evaluation, not research. Personnel and Guidance journal, 1975, 53, 563-569.

Burton, J.K., & Merrill, P.F. Needs assessment: Goals, needs, and priorities. Unpublished paper. Lincoln, Nebraska: University of Mid-America, 1977. Draft of a chapter for a forthcoming book.

Campbell, V.N., & Markle, D.G. Identifying and formulating educational problems. Palo Alto, Calif.: American Institute for Research, December, 1967. ED 030 985.

Chickering, A.W. Commuting versus resident students. San Francisco: Jossey-Bass, 1974.

Chickering, A.W. Education and identity. San Francisco: Jossey-Bass, 1969.

Cronbach, L.J. Educational psychology. 2nd ed. New York: Harcourt, Pace and World, 1963.

Coffing, R.T., Hodson, W.A., & Hutchinson, T.E. A needs analysis methodology for education of the handicapped, final report of community program No. 85-404. New Haven, Conn.: Area Cooperative Education Services, 1973. Cited in Coffing and Hutchinson (1974).

Coffing, R.T., and Hutchinson, T.E. Needs analysis methodology: A prescriptive set of rules and procedures for identifying, defining, and measuring needs. Paper presented at the annual convention of the American Educational Research Association, Chicago, April, 1974. ED 095 654.

Crim, R.D. Needs assessment for staff development: Final report. Laconia, N.H.: New Hampshire Supervisory Union, March, 1975. ED 106 271.

Cross, P.K. The adult learner. Paper presented at the annual convention of the American Association for Higher Education, Chicago: March, 1978.

Deddo, G., Libeler, L., & Thuveson, G. A comprehensive needs clarification research project. Unpublished Report, Azusa, Calif.: Azusa Pacific College, May 1977.

English, F.W., & Kaufman, R.A. Needs assessment: A focus for curriculum development. Washington, D.C.: Association for Supervision and Curriculum Development, 1975. ED 107 619.

Flores, T.R. Student personnel programs for married students: A needs assessment. Paper presented at the annual convention of the American Personnel and Guidance Association, San Diego, April, 1973. ED 083 A87.

Groves, D.L., Kahalas, H., & Erickson, D.L. A suggested modification to Maslow's need hierarchy. Social behavior and personality, 3(1) (1975) 65-69.

Hays, D.G., & Linn, J.K. Needs assessment: Who needs it? Ann Arbor, Mich.: ERIC Clearinghouse on Counseling and Personnel Services, 1977. ED 137 713.

Havighurst, R.J. Developmental tasks and education. 2nd ed. New York: David McKay, 1952.

Higher Education Management Institute. Needs assessment and planning: Managers handbook. Preliminary edition. Coconut Grove, Florida: Author, 1977.

Kapel, D.E. Counseling needs of environmentally handicapped students in higher education. Philadelphia: Temple University College of Education, 1971. ED 054 504.

Kaufman, R.A., Corrigan, R.E., & Johnson, D.W. Towards educational responsiveness to society's needs, a tentative utility model. Journal of Socio-Economic Planning Science, 3 (1969) 151-157.

Kiersy, ., McAleenan, A.C., & Bates, . Results Systems Management.

Lenning, O.T., et. al. Nonintellective correlates of grades, persistence, and academic learning. ACT Monograph No. 14. Iowa City, Iowa: American College Testing Program, 1974(a).

Lenning, O.T., et. al. The many faces of college success and their non-intellective correlates. ACT Monograph No. 15. Iowa City, Iowa: American College Testing Program, 1974(b).

Lenning, O.T. Previous attempts to structure educational outcomes and outcome-related concepts: A compilation and review of the literature. Boulder, Colo.: National Center for Higher Education Management Systems, 1977(a).

Lenning, O.T. Putting outcomes measurement into context: The outcomes program at NCHEMS. Paper presented at the annual conference of the North Central Region AERA Special Interest Group for Community/Junior College Research, Columbus, Ohio, July, 1977(b).

Lenning, O.T. Assessing student educational progress. ERIC/Higher education research currents, April, 1978. In AAHE college and university bulletin, 1978, 30(7), 3-6.

Lenning, O.T. A conceptual framework for identifying and assessing needs in postsecondary education. Paper presented at the annual forum of the Association for Institutional Research, Houston, May, 1978(a).

Lenning, O.T., Cooper, E.M., & Passmore, J.R. Identifying and assessing needs in postsecondary education: A review and synthesis of the literature. Boulder, Colo.: National Center for Higher Education Management Systems, submitted for publication.

Lenning, O.T., & Hanson, G.R. Adult students at two-year colleges: A longitudinal study. Community/junior college research quarterly (1) 3 (April-June, 1977) 271-287.

Lenning, O.T., Lee, Y.S., Micek, S.S., & Service, A.L. A structure for the outcomes of postsecondary education. Boulder, Colo.: National Center for Higher Educational Management Systems, 1977.

Maslow, A.H. Toward a psychology of being. 2nd ed. Princeton, N.J.: Van Nostrand, 1968.

Mager, R.R., & Pipe, P. Analyzing performance problems; Or you really oughta wanna. Belmont, Calif.: Fearon, 1970

McAleenan, A., Deedo, G. Handbook: strategies for comprehensive student needs clarification. Washington, D.C.: American College Personnel Association, submitted for publication.

Miller, T.K., & Prince, S. The future of student affairs. San Francisco: Jossey-Bass, 1976.

Monette, J.L. The concept of educational need: An analysis of selected literature. Adult education, 27 (1977) 116-127.

Mooney, R.L., & Gordon, L.V. Mooney problem check list manuals. Revised ed. New York: Psychological Corporation, 1950.

Moore, W., Jr. Against the odds: the high risk student in the community college. San Francisco: Jossey-Bass, 1970.

Murray, H.A. Proposals for a theory of personality. In explorations in personality: A clinical and experimental study of fifty men of college age. Edited by Henry A. Murray and Others. New York: Oxford University Press, 1938.

Scriven, M. Special feature: Needs assessment. Evaluation news, No. 1 (1977) 25-88. Available from Program Development Center. Aymer I. Hamilton Building, California State University--Chico, Chico, California 95929.

Witkin, B.R. An analysis of needs assessment techniques for educational planning at state, intermediate, and district levels. Hayword, Calif.: Office of the Alameda County Superintendent of Schools, 1975. ED 108 370.

# ASSESSMENT AND EVALUATION RELATED TO STUDENT SERVICES[1]

Oscar T. Lenning

Traditionally a chapter on assessment and evaluation would occur last in a section of a book such as this because such activities would be considered after-the-fact in relation to the activities and processes discussed in the chapters that follow. Assessment and evaluation cannot be very effective or have a major impact on improving those other processes, however, if they are after-the-fact activities. In fact, evaluation planning should occur along with the very earliest planning for an operational program, whether it is for a student services program or some other kind of program. Therefore, because such activities can apply to all of the types of programs discussed in the following chapters and should be considered in an early stage of planning for each of them, it is appropriate that this chapter on assessment and evaluation occur first.

It has increasingly been recognized that planning for evaluation must be an integral part of planning for a process and program, and should take place before the process begins in order to insure that all of the needed data will be collected at the appropriate time prior to and during the operational phase. This is true of end-of-period or end-of-tryout summative evaluation, the traditionally accepted form of evaluation that is used to suggest whether the program should be continued, terminated, or revised. An example of one of the problems that early planning prevents, lack of adequate baseline data, is discussed by Anderson, Ball, Murphy and Associates (1976) as follows:

> Evaluations are frequently undertaken without adequate baseline data. Sometimes, through lack of foresight, an evaluation is not envisaged until after the program is in

[1]Special appreciation is hereby expressed to Philip Beal for critiquing this paper and providing helpful suggestions.

> operation. In other instances, a program is considered so urgent that it is implemented before an evaluation can be planned and baseline data obtained; some of the War on Poverty programs begun in the 1960's fall in this category. For whatever reason of neglect or priority, when baseline data are unavailable, evaluation results are likely to be equivocal and to stimulate considerable argument and confusion about whether the program was effective. (pp. 42-43)

A potentially more useful concept of evaluation than summative is called formative evaluation (Scriven, 1967). Formative evaluation occurs during the development and operation of the program--and continually suggests how the program should be modified in order to improve it--so planning for it at an early stage of program development is especially crucial.

One component of evaluation (no matter what type of evaluation) is always assessment, as will be discussed shortly. As such, assessment leads to, and precedes, the activities and processes described in the later sections of this chapter. On the other hand, some assessment is not a component of evaluation--for example, assessment to guide strategy and activities when counseling with individuals.

## Assessment Versus Evaluation

In some cases evaluators gather their own data on which judgements are to be based, while in other cases they utilize data gathered and analyzed by others in measurement and assessment phases. Thus, the roles and activities are not the same for assessment as for evaluation, nor are the skills and

competencies needed to perform those roles and activities (although there is much overlap). This section discusses the differences between assessment and evaluation.

Assessment is a term made popular by Henry Murray and his associates in the late 1930's, who referred to it as the appraisal of individuals. As such, we can assess a person's physical and emotional characteristics, personality, needs, behavior, competencies, development, performance, educational and occupational progress, readiness for further education, quality of life, etc. This can be done in general, or in terms of the person's role, for example, his or her role as a student or as a teacher. Because of Murray, counselors and other student services personnel have traditionally (and it is still true today) tended to associate assessment with individuals, and evaluation with groups and programs. Furthermore, they have tended to think strictly in terms of assessing students, whereas it is just as legitimate and pertinent to their profession to assess themselves--their needs, their skills, their attitudes and interests, their professional readiness, their performance, etc. Analogous to this is Menges' (1973) model for assessing the readiness of teachers for professional practice.

Higher education authors outside of student affairs have often applied the term assessment to groups and programs--for example, Baird's (1974,1976) discussion of assessing educational environment, Doi's (1974) "assessing faculty effort," Lasell's (1974) conducting "assessment of internal decision events," and the Clark, Hartnett, and Baird (1976) assessment of the dimensions of quality in doctoral education." Furthermore, one often hears within education about assessment within even a larger context, such as a total educational institution, the total educational system in a state or for the nation as a whole,

and a community or society-at-large--for example, the assessment of enrollment patterning, educational environment, educational quality, educational impacts, and service to the community. And outside of education we hear about such things as assessing costs and ecological impact.

Many people in education seem to equate assessment to evaluation, for example, Dressel (1976) and Lasell (1974). On the other hand, some equate assessment to measurement, for example, Harrocks (1964). And then there are those who equate evaluation to measurement, such as May (1975) when he defines guidance program evaluation as "the measurement of what is valued." Others take an intermediary position and view measurement as a component of assessment, which is in turn a component of evaluation. This last view is the relationship between measurement, assessment, and evaluation used throughout this chapter.

"Assess" is closely related to the term "assay," which means to examine, test, or analyze. Murphy (1976) has pointed out that "in its derivation, the word assess means 'to sit beside' or 'to assist the judge' (p. 27)." From such a perspective, assessment refers to gathering the data, transforming the data so that it can be interpreted, applying analytical techniques, and analyzing the data in terms of alternative hypotheses and explanations. Based on such assessment, judgements about value, worth, and ways to improve can be made--the process of evaluation. Therefore, for purposes of this chapter, an assessment study includes measurement and analysis, while an evaluation study includes measurement, analysis, and judgement. One cannot have assessment or evaluation without measurement and analysis of some kind.

Another way to say the same thing is to use some words of Popham (1975). He defines measurement as "status determination," and evaluation as "worth determination." Then, based on the above discussion, assessment is what links status determination to worth determination.

## Assessment Strategies and Considerations as They Relate to Student Services

Lenning (1977a) has discussed eight uses of student assessment by college staff personnel. Three of them are definitely evaluation functions: grading, promotion, and merit awards; evaluating efficiency and effectiveness; and evaluating innovations. The others are less evaluative in nature: planning learning experiences; counseling and advising students; diagnosing student problems; appraising student readiness; and classifying and categorizing students. (Students can also usefully conduct their own assessments--of themselves, their needs, their environments, their activities, and their achievements.) Assessments of persons other than students (such as staff, graduates, the members of the community) can also be important in student affairs, and such assessments are potentially as diverse in their functions as are the functions of student assessment.

In this section will be discussed general procedures for conducting assessments. Then the focus will shift to special considerations for different kinds of assessments, such as assessments of individuals versus groups, assessment by self versus others, and assessment of needs versus goals, versus achievements, etc. The discussion of both general procedures and special considerations will imply skills and competencies needed for conducting assessments.

### General Assessment Procedures

Payne discusses seven generally accepted stages or steps in assessing

cognitive and affective learning, and those stages appear to be applicable to all kinds of assessment: (1) specifying detailed goals and objectives, (2) designing the assessment system, (3) selecting measures and data gathering methods, (4) collecting data, (5) analyzing and summarizing data, (6) contrasting data and objectives, and (7) feeding back results. Each of these tasks will be discussed from the perspective of a student affairs worker.

Specifying Goals and Objectives. Student affairs program goals generally tend to be broad and vague abstractions that use such terms as "to promote maximum development of the total self," "to promote self-actualization," "and to develop realistic and independent decision making." If one is to have effective guidelines for conducting actions to bring about accomplished ends for students, a course, a program, or an institution, such goals need to be transformed into concrete, observable, precise terms. For an example of one way to do this, see Lenning (1977b, pp. 15-24). Although he was talking about university goals, what Conrad (1974) says about goals also can be stated in terms of program goals: (1) they are standards against which to judge program success, (2) they provide a source of legitimacy for the activities of the program, (3) they define and order program needs, (4) they define the units of program outcomes, (5) they identify the program's clientele, and (6) they define the relationship between the program, the institution of which it is a part, and society.

What we are trying to assess must relate to the goals and objectives of the program, or individuals, being assessed. For programs, for example, the variables being assessed should relate to two different kinds of program goals. First are outcome goals, the results or consequences that the program activities are intended to achieve. The other type of goals,

process goals, refer to how the outcome goals are intended to be achieved--the personnel, money, time, activities, techniques, methods, and tools that will be utilized and in which ways to achieve particular outcome goals.

Transforming a goal into specific ends or objectives to be achieved is a difficult task for many people. The task of reaching maximum agreement among various staff members, and constituents, concerning goals and goal priorities is also a difficult task, and may sometimes call for the application of special concensus rendering techniques, such as the Q-sort technique or the Delphi technique, if give-and-take discussion does not yield enough agreement.

What has been said about the goals of the program (or of the individual in the case of assessing individuals) also applies to the goals of the assessment study. Those conducting the assessment must delineate clearly and in specific terms what is being assessed for whom, why the particular variables are being assessed, how the assessment data are expected to relate to individual or program goals, and how the assessment data are to be applied and used.

Designing the Assessment System. Once the goals and objectives for the assessment effort are specified, work can begin on developing the assessment strategy and procedures to be used for accomplishing those goals and objectives. The success of the assessment effort rests on having an integrated, detailed, well-thought-out assessment design that effectively relates to the assessment goals and objectives. First the purposes of the assessment should be outlined, followed by a delineation of the context in which the assessment is to take place. The context includes factors within the program, institution, or other environments

that will either assist the assessment effort or constrain it, such as attitudes and values of staff or students, political pressures and situations, financial and staff resources available, time and space considerations, base-line data that are already available, the diversity of the students using various student services, etc. Third to be outlined are the specific questions that need to be answered by the assessment to assist the particular problem solving, decision-making, or other purposes formulated for it. Next, decisions will be made and written down about: the information needed to provide evidence useful in answering the various questions, the available indicators that can lead to such information, the relevant data sources that are feasible, whether sampling should be used and what kind, the data gathering and analysis strategies and procedures that will collect the proper data and convert it into pertinent information, the data interpretation strategy, and the feedback procedures for getting the information out to decision-makers and concerned others in an effective manner that promotes use. Finally, factors such as assessment costs and how the entire plan fits together into an integrated system will be considered and refinements or modifications made as necessary.

The design must be realistic and feasible in terms of the costs and effort required, and must be effective in generating the information needed to answer the pertinent decision-makers' questions. It must identify and provide a rationale concerning which specific groups of students and other persons, and entities such as the environment, should be assessed. How the assessment strategy and procedures will vary by group or area should also be ascertained. For example, assessing older students' academic competencies using a standardized psychometric instrument designed for and normed on teenage college students would clearly be inappropriate unless it was tested and found to be valid for them also.

The design of an assessment for a student services program, or that is meant to provide assessment data for use by individuals, should be tailored specifically to the situation at hand. One may usefully be able to borrow ideas from another program or institution, but care should be taken to see how it should be customized to the local situation. The same is true of making use of general models, such as the General Integrative Model developed by Pottinger and Klemp (1975, 1976) that involves the use of various tests and scales they developed for assessing the integration of life skills within students. Their model was designed for investigating how students process and integrate information, as contrasted to the storage and retrieval of information. Therefore, it can be used for assessing such things as how students think and react in various types of social situations, which is of major concern to most student affairs workers.

Selecting Measures and Data Gathering Methods. In selecting measures and indicators, reliability and validity (with respect to the questions that need answers) are important criteria. So are factors such as ease of data collection, cost of data collection, ease of scoring and tabulating, appropriateness to the analytic procedures and tests that are planned, etc. To illustrate the importance of such factors, this author recently heard about a new test battery that had been tested out with reported success, and that seemed to have adequate reliability plus good validity in measuring "real life" competencies. Since he was consulting for the evaluation of a nontraditional program emphasizing the development of such competencies, he recommended that they try it out for their evaluation. Fortunately, they tried it out on a pilot test basis because even though it admirably met the reliability and validity criteria, they found that it was extremely difficult for their people to administer and score. This case illustrates the importance of trying out measures and data gathering

procedures ahead of time with small pilot samples of respondents similar to those in the study, before the final decision is made to use them in the full assessment study.

Standardized paper and pencil instruments are often used in student and program assessments; but although they may have good reliability and validity for what they purport to measure, they often do not measure what is specifically of concern in the program. A good example of this is the Watson-Glazer Critical Thinking Appraisal. It has excellent validity if one's concern is with the ability to reason critically in a passive manner, and it has good reliability. If one is concerned about the ability to apply that critical thinking proactively in "real life" situations, such as applying critical thinking to managing social confrontations, however, its validity is low for measuring that competency. If one is considering the use of a standardized instrument, it is crucial to study the reviews in Boros (1972) as well as any other available reviews (such as the ones in Measurement and Evaluation in Guidance, Educational and Psychological Measurement, and NCME Measurement in Education ) for assurance that it measures what needs to be measured.

To get a paper and pencil instrument that measures specifically what is desired, one will often have to construct his/her own. There are an abundance of excellent texts on measurement theory, the development of norm-referenced tests, and the development of questionnaires, with the variety being such that there are appropriate ones for experienced as well as inexperienced instrument developers. Whenever possible, locally-developed instruments should build on similar ones developed elsewhere. Lang, Lehmann, and Mehrans (1967) have shown that revising items takes less time, effort, and expense than developing them from scratch. Great care must be taken, however, to modify them appropriately for the new context. Another point which should be made here

is that locally-developed criterion-referenced instruments that focus on absolute level of performance or mastery should always be considered as an alternative to norm-referenced instruments (see Gronlund [1973] for help in developing such instruments).

Most measures and indicators are more reliable and valid in some contexts than in others. Furthermore, all measures have weaknesses (some more so than others) and where one is weak another measuring a similar variable may be strong, and vise versa. Therefore, whenever it is feasible, it is advised to use multiple measures and indicators for a particular learning outcome unless one has complete confidence in one of the measures. If they all indicate the same thing, one's assurance that the indication is actuality is greatly increased. As an example of how multiple measures lead to greater reliability and validity, let us take the case of unobtrusive measures. Thelin (1977) has emphasized that unobstrusive measures "have to be considered in clusters and tied to a conceptual framework if they are to be of significance for institutional monitoring [p. 133]." Unobstrusive measures--for example, an increase in attendance at campus plays and art displays after the occurrence of a demonstration program on appreciation of the arts sponsored by the Office of Student Affairs in the dormitories--can be quite useful and revealing measures. See the book by Webb and associates (1966) for helpful, in-depth discussion about such measures.

Many times it is possible to use data that have been collected for other purposes (for example, data from student transcripts, administrative files, and community records), which some have called "secondary data." Usually we think immediately of having to collect data when there is need for an assessment study, and yet we might be able to get by without having to go to the trouble of collecting data for the study. Although they save costs and time, however, in addition to

providing useful supplemental evidence, such data can lead to serious problems if great care is not taken in using them. Boyd and Westphall (1972) provide criteria for determining when particular secondary data are acceptable for a particular situation and use, plus they discuss precautions for avoiding the potential pitfalls.

Those doing assessments of various kinds have traditionally limited themselves to paper-and-pencil tests, questionnaires, and interviews for data collection, even though a variety of other methods have been shown to be practical, valid, reliable, and cost effective for particular purposes and contexts. Lenning (1978a) found fifty different data collection methods in the literature that were being recommended for assessments of various kinds. Knapp and Sharon (1975) review a number of these methods, which can be used instead of or to supplement the traditional data collection methods. As was true for indicators and measures, and for the same reasons, the use of multiple data collection methods is desirable whenever it is feasible. That this can be feasible and cost effective was shown by the learning assessment system developed and implemented at Empire State College (Palola and Lehmann, 1976). They supplement standardized and local test score data with student self report, instructor observations, writing samples, and administrator observations.

Collecting Data. One can have exactly the measures and data collection methods needed for collecting data, and yet it all can be for naught if one doesn't plan well (concerning such things as who to collect the various data from, how to approach them, and sampling procedures) and use care in the actual collection of the data. For example, a poorly worded cover letter with a questionnaire could easily cut the response rate in half or more; so could administering the

questionnaire shortly before mid-term exams. Much time, money, and frustration can be saved if one takes pains to have: well-designed interview forms, written instructions to read for test administrators, careful selection of samples, questionnaire items free of bias, well-designed pilot tests to try out procedures ahead of time, procedures for maximizing response rate (such as showing the need for such data, and promising and giving respondents feedback about the results), sensible coding and data formatting rules, careful editing procedures, etc. The appendices of Micek, Service, and Lee (1975) provide many helpful suggestions in this area.

Using the Data: analysis, interpretation, reporting, and application. Most assessment studies rely exclusively on the use of simple descriptive statistics such as means, standard deviations, and tabulations and cross-tabulations of frequencies and percentages. Much useful information can be obtained from the use of such simple statistics, especially if they are profiled graphically and patterns of similarities and discrepancies across information items and across groups are examined. Means by themselves can be quite misleading if the frequency distributions are not also examined. Also, response bias should be analyzed in questionnaire and interview studies.

It is often useful to make comparisons across groups when group difference on other characteristics (for example, input variables) are taken into consideration. Although "eyeballing" across groups can be revealing, it should be supplemented with statistical tests such as t-tests, chi square, analysis of variance, correlational analysis, and discriminant analysis. Unless the staff member is experienced in such techniques, however, the aid of a statistician on campus should be obtained in planning the analysis. In planning the study, the staff member and the analytical design expert should consider using one of the analytical designs proposed by Campbell and Stanley (1963), and many helpful

resources that discuss the selection and use of statistical methods are available (for example, Tatsuoka and Tiedeman [1963] and Siegel [1956]).

In outcome studies, change in status is often of concern. However, most analysts now agree that change scores or average change should not be used in such analyses. Rather, they advise comparing the final status of the students to the final status of other students having the same initial ability. For comparison across groups this can be accomplished by random appointment to each group initially, by group assignment through stratified random paired-matching on input level, by comparing across similar initial-level strata, or through the use of sophisticated statistical adjustments to post-test scores that effectively equate initial levels (for example, analysis of covariance).

Interpretation and use of data are also crucial elements in an assessment study, and too often the application of such results is ineffective. If the assessment data are to have any impact, the users of the data must be precisely identified early in the assessment planning process, prior to conducting the study. Input should be solicited from them concerning their specific concerns and what assessment information would be helpful to them in their decision making. Such input will serve a primary role in determining what study groups, data, and analyses are desired for the study. Once analyses are completed, brief, concise reports tailored to each person's informational needs should be sent to them. Graphical presentation can often be helpful in such reports. One interesting and potentially useful way of making these reports attention-getting is through a "peer group--intergroup" model proposed by Alderfer and Holbrook (1973) and used by Hecht (1977). Selected college staff prepare "action-oriented" written and oral responses to the evaluation data for presentation to other college staff <u>at their levels</u>.

Special Considerations for Different Kinds of Assessment

The general steps outlined in the preceding section apply to both the assessment of groups and the assessment of individuals. For the assessment of individuals, however, they apply in a much more informal, subjective way than is true of assessment of groups. Furthermore, an important difference is that for assessment of individuals the instruments used must have much higher reliability coefficients (in the 0.8-0.9 range versus as low as 0.6 for groups) to be useful.

Another dimension on which there are differential considerations is the assessment of students versus the assessment of nonstudents. Usually one is interested in assessing different factors for students than for nonstudents. Secondly, the assessment of students often involves the use of standardized paper-and-pencil instruments, such as achievement and ability tests, whereas most non-student assessments of interest to student affairs workers will not make use of such instruments. To illustrate, May (1975) discusses two types of staff member assessment (he calls it evaluation) for the guidance setting:

For assessment of competency (p. ):

> Each individual counselor lists the ten or twelve functions that must be achieved to have a quality guidance program. These are services that you feel so strongly about that you would defend them before a group of district administrators or before the school board. Place this list in rank order . . . The combined staff list will constitute the values for the guidance program . . . At the conclusion of the year, prepare a short narrative explaining how you achieved, or why you failed to achieve, each goal and request your supervisor to do the same. Exchange narratives, wait several days and meet to discuss differences.

For technical competency assessment (p. ):

> To be useful, evaluation of process must provide a direct measure of behavior change or knowledge learned as a result of

contact with the counselor. Perhaps the following approach could be used.

1. Detail each task, formulate specific behavioral objectives and write implementation strategies.
2. Describe what a student who has achieved the specific objectives does that distinguishes that student from one who has not achieved the objectives.
3. Outline precise situations that require the learners to demonstrate whether they can react in a knowledgeable way.
4. Develop a pre-determined method for recording and evaluating responses to situations.

These are two examples of individual staff members assessing themselves and being assessed by others. There are probably many other ways in which such assessment could be carried out.

When it comes to assessment of individual students, student affairs workers (and especially personal counselors) have been considered experts for many years. However, the traditional focus on student affairs personnel doing the assessment of students is being replaced in many quarters by student affairs personnel helping students to assess themselves. As outlined by Miller and Prince (1976), the goal of assessment for student development "is to help students understand their current patterns of behavior, emphasizing positively the specific skills they have instead of the ones they lack. From this base, all students can move toward increased self-direction . . . Assessment programs must be designed with students rather than for or about them; therefore, only information that can directly increase students' self-understanding or improve their self-direction need be collected. The primary focus of many student assessment efforts has been to help student affairs workers better understand their 'clients.' Although this objective is desirable, it has tended to create volumes of information about students that is rarely used directly by them" (pp. 48-49).

Miller and Prince have much good discussion focusing on how to conduct such self assessment. They do not limit this "assessment for student development" to individuals, however. They define it as "the process through which students, groups, and organizations systematically acquire and use data from a variety of sources to describe, appraise, and modify their own development. Thus, this method "differs from the more traditional approaches in its purpose, in what is assessed, in the techniques used, in the way it is implemented, and in the role the student affairs practitioner plays." (p. 47)

A word should also perhaps be said about another noteworthy assessment differentiation. Assessment of certain types of factors have become separate areas of specialization. A good example is "needs assessment," where discrepancy between "what is" and "what should be" is a primary focus. Also, needs assessment is noteworthy in that there is a serious definitional problem among assessors concerning what is a "need" (Lenning, 1978b; Lenning and McAleenan, in press). Other areas of specialization within assessment include assessment of: ability, achievement, personality, goals, values, interpersonal functioning, and organizational functioning.

## Strategies for Evaluating Student Service Activities and Programs

In their excellent book of readings and comment pertaining to the theory and practice in educational evaluation, Worthen and Sanders (1973) open with a serious charge that unfortunately seems to still be true:

> Evaluation is one of the most widely discussed but little used processes in today's educational systems. This statement may seem strange in the present social context where attempts to make educational systems accountable to their publics are proliferating at a rapid pace . . . yet, despite these trends toward accountability, only a tiny fraction of the educational programs operating at any

> level have been evaluated in any but the most cursory fashion, if indeed at all. Verbal statements about evaluation and accountability? An abundance. Genuine evaluation of educational programs? Unfortunately rare. (p. 1)

This statement applys to student affairs programs as much if not more than other areas of education, especially the second part which indicates that programs "have been evaluated in any but the most cursory fashion, if indeed at all." Whereas most instructional programs have a large number of clear-cut learning goals that are relatively easy to state in measureable outcome terms, student affairs goals for students often tend to be imprecise, vague, and illusory in nature, and difficult to measure. This is because they are more often emphasizing affective development while formal instructional programs are more often emphasizing cognitive development. Secondly, they are more often emphasizing a far wider array of goals for students; which could mean that they are spreading their focus too thin. Counselors and other student affairs people also perhaps have more of an aversion to empirical data and analysis than do academicians involved primarily in research and scholarship activities.

On the other hand, being seen to serve a support rather than a line role in most postsecondary institutions, student services people have increasingly started to recognize their vulnerability in any projected financial cutback and retrenchment. For their programs to retain support, student services personnel must do a more effective and concrete job of communicating to others the important and central benefits students can gain from their programs, and must provide factual evidence of such benefits occurring. Furthermore, they must demonstrate that their activities and programs are both efficient and effective. Only through effective program evaluation can such evidence be developed, and such evaluation must begin with a clear and concrete delineation of activity/program goals and objectives.

Burck and Peterson (1975), with "tongue-in-cheek cynicism," discuss seven of the most common evaluation strategies, or models, used in student personnel services. All of them are really not program evaluation at all, according to Burck and Peterson. These "models" are: (1) the Sample-of-One Method, which involves discussing the problem with one or two colleagues and arriving at a consensus; (2) the Brand A versus the Brand X Method, which compares nonequivalent "apples-versus-oranges" groups; (3) the Sunshine Method which solely provides evidence of program quantity and extensive client exposure to the program; (4) the Goodness-of-Fit Method, which establishes how standard the program is and how well it fits into established procedures; (5) the Committee Method, which involves a group of people connected with the program discussing and reaching consensus on the program's effectiveness and writing a report for those in authority that points out and extolls its merits; (6) the Shot-in-the-Dark Method, where clear program objectives are lacking for the program, or where evaluation is entirely divorced from program goals, so evaluation involves a random search for any kind of an impact that might be possible; and (7) the Anointing-by-Authority Method, where nationally recognized consultants are brought in to confirm pre-ordained findings through talking with the "right people," and whose name and status legitimize those findings in the eyes of those in authority. The one thing that all of these common (and they are common) approaches have, in addition to being poor evaluation, is that none of them objectively try to determine the real outcomes of the program.

Another author who has discussed the need for better evaluation in student services work, and specifically in counseling, is Krumboltz (1974). Rather than talk in terms of evaluation, however, he focuses on accountability; and presents a number of benefits to counselors from an effective accountability model.

Similar benefits could accrue to other areas of student affairs if a good evaluation system were implemented. His proposed benefits are as follows (pp. 639-640)--

> ...would enable counselors to: obtain feedback on the results of their work; select counseling methods on the basis of demonstrated success; identify students with unmet needs; devise shortcuts for routine operations; argue for increased staffing to reach attainable goals; (and) request training for problems requiring new competencies....By learning how to help clients more effectively and efficiently, counselors would obtain: more public recognition for accomplishments; increased financial support; better working relationships with teachers and administrators; acknowledged professional standing; (and) the satisfaction of performing a constantly improving and valued service.

Krumboltz does not present such a model, but he does propose seven criteria for such a model, or system, that are worthy of attention and adoption (pp. 640-641):

1. In order to define the domain of counselor responsibility, the general goals of counseling must be agreed to by all concerned parties.
2. Counselors' accomplishments must be stated in terms of important observable behavior changes by clients.
3. Activities of the counselor must be stated as costs, not accomplishments.
4. The accountability system must be constructed to promote professional effectiveness and self-improvement, not to cast blame or punish poor performance.
5. In order to promote accurate reporting, reports of failures and unknown outcomes must be permitted and never punished.
6. All users of the accountability system must be represented in designing it.
7. The accountability system itself must be subject to evaluation and modification.

A number of strategies, or models, have been developed by evaluation theorists and practitioners in the area of curriculum development that provide viable alternatives to meet distinct conditions and situations, and that have aspects or

components that student affairs program evlauators should consider applying. Worthen and Sanders (1973) reprinted original writings by a number of model developers that they felt had made important contributions to evaluation practice and could provide frameworks for such practice. Following each reprint, they separately discuss each model in terms of pótentials and limitations, and then use a chart (pages 209-220) to compare them on 12 factors or dimensions: (1) definition, (2) purpose, (3) key emphasis, (4) role of the evaluator, (5) relationship to objectives, (6) relationship to decision-making, (7) types of evaluation, (8) constructs proposed, (9) criteria for judging evaluation studies, (10) implications for evaluation design, (11) contributions to the design of evaluation studies, and (12) limitations and possible misuses of the approach.

Contributions that these and other models have to make to an overall framework of viable concepts and alternative strategies and procedures from which one can choose for the evaluation of student services will be outlined here. As Scriven suggests in his thoughtful article (1967), the major focus in the models may be on curriculum evlauation, but the same ideas can also be applied to other kinds of evaluation, such as student services evaluation. A special focus of the following discussion will be on the procedures for implementing each model, which can suggest evaluator skills and competencies needed for such implementation. After a brief discussion of noteworthy and relevant points from each model, as perceived by this writer, the discussion will conclude with categorizations of model types proposed by two authors who attempted to place the various models into perspective.

## The Scriven Formulations

Scriven (1967, 1971) made a number of useful points. First, he differentiates the goals of the evaluation from its roles. The goals may be usefully formulated in terms of questions regarding performance, worth, merits, drawbacks, etc. The goals lead to "gathering and combining performance data

with a weighted set of critical scales to yield either comparative or numerical ratings, and in justification of (a) the data-gathering instruments, (b) the weightings and (c) the selection of criteria [p. 40]." While the goal in essence focuses on the gathering of valid and reliable evidence relating to the worth of the service or activity, the role being performed can vary widely.

Two basic roles that Scriven describes are the formative role of how to improve the service or activity, and their outcomes on students or others, and the summative role of whether the service or activity should be terminated, continued as is, or continued in a modified form. Some of the same data may serve both roles, but the two roles mainly require different types of data--in the first case data that assist understanding and in the second case data that assist value judgement. Scriven feels that evaluators performing the formative role should be regular members of the on-going program staff and that the summative role should be carried out by unbiased, independent, outside people without a vested interest in seeing that the program succeeds (it doesn't have to be someone outside of the institution, just someone outside the program who has no vested interests in the program), and who can thus be objective and matter of fact about the matter.

An additional role differentiation for evaluators mentioned by Scriven (1971) was (1) evaluating the goals of the program, versus (2) evaluating whether and how well the program goals have been achieved. Formal program evaluation studies have almost always focused on judging the worth of the program and/or how to improve the program in terms of the goals of the program developers, without considering the worth of the goals. Scriven says, however, that an evaluator should also evaluate the appropriateness and worth of the program goals. Furthermore, he indicates that the goals should be evaluated prior to evaluating the attainment of those goals; if it is not a good goal it really does not matter whether or not

the goal has been achieved. Evaluating the appropriateness of goals involves agreed upon, objective criteria for what constitutes a good goal, plus applying logic. Unlike the evaluation of goal achievement, goal evaluation does not involve measurement; goals cannot be measured as can achievement. According to Scriven, the welfare of the consumer and society should be important criteria in evaluating goals.

Scriven made one additional noteworthy point concerning program goals--that the evaluator should not focus so intently on whether the program goals have been achieved that he/she fails to notice significant non-intended program outcomes that have taken place. According to Scriven, one should definitely look for evidence of unintended outcomes and be open to considering equally such evidence with evidence of accomplishment or lack of accomplishment pertaining to the program goals. The importance of this admonition is demonstrated by Lenning and associates' (1977) finding that unintended outcomes can be positive as well as negative, and can have as much or more evaluative impact on program planning as the intended program outcomes. Even negative outcomes, which many people wish to ignore, should be considered because they can suggest important modifications that are needed in the program.

In reaction against the commonly accepted strategy of devoting all evaluative attention to the outcomes intended or planned for the program, Scriven (1972) developed a model that looks for significant program impacts of any kind, whether they are implied by the program goals or not, which he called "goals-free evaluation." Scriven's idea is that an outside evaluator should be brought in and should deduce what appears to be the programs' goals based on his/her observations. Only then should the evaluator talk to the program staff about their intended program goals. There are problems with goals-free evaluation as a method, but Scriven's point is well taken. Furthermore, Scriven does not downgrade the importance of program goals for evaluation, as the following quote (Scriven, 1971) indicates: "The statement of goal narrows our problem to manageable size. We can't apply all

possible tests to every sample in order to look for all possible effects. We check in the general area where the shot was aimed, keeping our eyes open for any side effects."

Another useful Scriven formulation is his distinction between what he calls "secondary" or "intrinsic" evaluation and "primary" or "pay-off" evaluation, evaluation of the means used to bring about desired end results versus evaluation of those end results. He suggests that secondary evaluation is fine if we can make a solid link between the secondary indicator and the primary payoff; otherwise primary evaluation is essential. However, by doing both types of evaluation in the same evaluation study, understanding is increased and we have greater assurance that our judgements of worth are reliable. Intrinsic and pay-off evaluation both can be applied in formative evaluation as well as in summative evaluation.

Reference should also be made to a general five-step procedure for conducting program evaluation that Scriven outlined (1971): (1) identify and assess the intended goals of the project or program, using ratings of such things as social utility, necessity for the goals at this point in time, and the number of people that will be benefited if the goals are met; (2) measure the program's effectiveness, where effectiveness is not restricted to the stated or implied goals; (3) assess program costs (here Scriven uses a 12-point check list and breakdown involving installation versus maintenance costs, dollar versus psychic costs, per-student versus per-system costs, etc. (4) assess the program availability and practicality; and (5) produce an overall summary report. Scriven was talking to professional evaluators when he presented this list, but it is also relevant for other evaluators.

In closing this discussion of Scriven's formulations, several additional noteworthy points should be made. One is Scriven's contention that process research, research aimed at describing and understanding the processes taking place

within a service program, only becomes evaluation if its focus is on judging the merit or worth of the process or on improving the process. Thus, the common view of accountability illustrated below by Wickline (1971) is clearly not program evaluation, in spite of what many people might think.

> If one sat in on Congressional hearings today, he would find that, in justifying the expenditures in education, people still talk primarily about how the money has been spent, what kind of materials and equipment have been purchased, the number of children who have been served and the number of teachers who have been involved. They talk very little about what has been accomplished.

On the other hand, Scriven does not ignore process, nor does he ignore costs. He contends that data about program benefits should be related both to data about program process and program costs. And when it comes to costs and benefits, Scriven feels that the costs and benefits of the evaluation process itself should also be explored, preferably in probable terms prior to the time that the evaluation is to commence, and the evaluation process modified accordingly.

Finally Scriven demonstrates the desirability of using comparison groups, even though we cannot control for particular input characteristics that could account for differences in findings among groups, and even though the differences expected are usually small. He also discusses the usefulness of taxonomies in specifying in more detail the criteria of achievement or other outcomes to be used in an evaluation study, and he proposes use of his modified version of Bloom's (1956) taxonomy. Perhaps more useful for such purposes in student affairs evaluations is the comprehensive taxonomy of postsecondary education "types of outcomes" and "audiences" developed by Lenning et al (1977) because it focuses much more in noncognitive areas than does Scriven's. That taxonomy is outlined in Figures 1 and 2. (Standard definitions and sample

---

Figures 1 and 2 go about here

---

measures or indicators are provided by Lenning et al [1977] for all categories and subcategories of Figure 1.) It should be useful to also apply Scriven's taxonomy, however, to generate student service evaluation coverage ideas.

## Stake's Countenance or Preordinate Evaluation

Stake (1967) emphasized how informal, subjective evaluation differs from formal, objective evaluation. Informal evaluation depends on "casual observation, implicit goals, intuitive norms, and subjective judgment," while formal evaluation depends on "check-lists, structured visitation by peers, controlled comparisons, and standardized testing of students [p. 523]." Informal evaluation is what usually takes place, and can provide effective and penetrating insight. However, it can as often be superficial and distorted, so Stake suggested that rational judgment requires the use of formal evaluation. He suggested that description and judgment are the two major activities in program evaluation, and that they should be many-faceted and comprehensive activities focusing on all aspects of the program.

This Model distinguishes among three types of data that are necessary for both description and judgment, antecedent data (input conditions and characteristics not part of the program that may relate to outcomes), transaction data (interactions and encounters between the clients and program [including program personnel] that constitute the program processes), and outcome data (short- and long-term consequences of the antecedents and transactions on the clients, the program and its components, and other persons or entities). A matrix with twelve cells describes the data that should be collected for the evaluation, with antecedents, transactions, and outcomes forming the vertical axis and intents (goals and objectives), observations of outcomes, standards

Figure 1

TYPES OF OUTCOMES THAT COULD BE AIMED FOR IN POSTSECONDARY EDUCATION[a]

| Category Code Number | Entity Being Maintained or Changed |
|---|---|
| 1000 | *ECONOMIC OUTCOMES* |
| 1100 | Economic Access and Independence Outcomes |
| 1110 | Economic Access |
| 1120 | Economic Flexibility, Adaptability, and Security |
| 1130 | Income and Standard of Living |
| 1200 | Economic Resources and Costs |
| 1210 | Economic Costs and Efficiency |
| 1220 | Economic Resources (including employees) |
| 1300 | Economic Production |
| 1310 | Economic Productivity and Production |
| 1320 | Economic Services Provided |
| 1400 | Other Economic Outcomes |
| 2000 | *HUMAN CHARACTERISTIC OUTCOMES* |
| 2100 | Aspirations |
| 2110 | Desires, Aims, and Goals |
| 2120 | Dislikes, Likes, and Interests |
| 2130 | Motivation or Drive Level |
| 2140 | Other Aspirational Outcomes |
| 2200 | Competence and Skills |
| 2210 | Academic Skills |
| 2220 | Citizenship and Family Membership Skills |
| 2230 | Creativity Skills |
| 2240 | Expression and Communication Skills |
| 2250 | Intellectual Skills |
| 2260 | Interpersonal, Leadership, and Organizational Skills |
| 2270 | Occupational and Employability Skills |
| 2280 | Physical and Motor Skills |
| 2290 | Other Skill Outcomes |
| 2300 | Morale, Satisfaction, and Affective Characteristics |
| 2310 | Attitudes and Values |
| 2320 | Beliefs, Commitments, and Philosophy of Life |
| 2330 | Feelings and Emotions |
| 2340 | Mores, Customs, and Standards of Conduct |
| 2350 | Other Affective Outcomes |
| 2400 | Perceptual Characteristics |
| 2410 | Perceptual Awareness and Sensitivity |
| 2420 | Perception of Self |
| 2430 | Perception of Others |
| 2440 | Perception of Things |
| 2450 | Other Perceptual Outcomes |
| 2500 | Personality and Personal Coping Characteristics |
| 2510 | Adventurousness and Initiative |
| 2520 | Autonomy and Independence |
| 2530 | Dependability and Responsibility |
| 2540 | Dogmatic/Open-Minded, Authoritarian/Democratic |
| 2550 | Flexibility and Adaptability |
| 2560 | Habits |
| 2570 | Psychological Functioning |
| 2580 | Tolerance and Persistence |
| 2590 | Other Personality and Personal Coping Outcomes |
| 2600 | Physical and Physiological Characteristics |
| 2610 | Physical Fitness and Traits |
| 2620 | Physiological Health |
| 2630 | Other Physical or Physiological Outcomes |
| 2700 | Status, Recognition, and Certification |
| 2710 | Completion or Achievement Award |
| 2720 | Credit Recognition |
| 2730 | Image, Reputation, or Status |
| 2740 | Licensing and Certification |
| 2750 | Obtaining a Job or Admission to a Follow-up Program |
| 2760 | Power and/or Authority |
| 2770 | Job, School, or Life Success |
| 2780 | Other Status, Recognition, and Certification Outcomes |
| 2800 | Social Activities and Roles |
| 2810 | Adjustment to Retirement |
| 2820 | Affiliations |
| 2830 | Avocational and Social Activities and Roles |
| 2840 | Career and Vocational Activities and Roles |
| 2850 | Citizenship Activities and Roles |
| 2860 | Family Activities and Roles |
| 2870 | Friendships and Relationships |
| 2880 | Other Activity and Role Outcomes |
| 2900 | Other Human Characteristic Outcomes |
| 3000 | *KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOMES* |
| 3100 | General Knowledge and Understanding |
| 3110 | Knowledge and Understanding of General Facts and Terminology |
| 3120 | Knowledge and Understanding of General Processes |
| 3130 | Knowledge and Understanding of General Theory |
| 3140 | Other General Knowledge and Understanding |
| 3200 | Specialized Knowledge and Understanding |
| 3210 | Knowledge and Understanding of Specialized Facts and Terminology |
| 3220 | Knowledge and Understanding of Specialized Processes |
| 3230 | Knowledge and Understanding of Specialized Theory |
| 3240 | Other Specialized Knowledge and Understanding |
| 3300 | Research and Scholarship |
| 3310 | Research and Scholarship Knowledge and Understanding |
| 3320 | Research and Scholarship Products |
| 3400 | Art Forms and Works |
| 3410 | Architecture |
| 3420 | Dance |
| 3430 | Debate and Oratory |
| 3440 | Drama |
| 3450 | Literature and Writing |
| 3460 | Music |
| 3470 | Painting, Drawing, and Photography |
| 3480 | Sculpture |
| 3490 | Other Fine Arts |
| 3500 | Other Knowledge, Technology, and Art Form Outcomes |
| 4000 | *RESOURCE AND SERVICE PROVISION OUTCOMES* |
| 4100 | Provision of Facilities and Events |
| 4110 | Provision of Facilities |
| 4120 | Provision or Sponsorship of Events |
| 4200 | Provision of Direct Services |
| 4210 | Teaching |
| 4220 | Advisory and Analytic Assistance |
| 4230 | Treatment, Care, and Referral Services |
| 4240 | Provision of Other Services |
| 4300 | Other Resource and Service Provision Outcomes |
| 5000 | *OTHER MAINTENANCE AND CHANGE OUTCOMES* |
| 5100 | Aesthetic-Cultural Activities, Traditions, and Conditions |
| 5200 | Organizational Format, Activity, and Operation |
| 5300 | Other Maintenance and Change |

[a]From the type-of-outcome dimension of the NCHEMS Outcomes Structure (Lenning et al., 1977, p. 27). The Structure provides standard definitions and sample measures or indicators for each category, along with procedures for subdividing into additional levels of categories.

BEST COPY AVAILABLE

Figure 2

## PEOPLE OR ENTITIES THAT MAY BE RECIPIENTS OF VARIOUS POSTSECONDARY EDUCATION OUTCOMES[a]

10. *Individual/Group Clients*—This category refers to persons or groups of persons who are direct clients of the postsecondary education unit of concern and/or their immediate associates, such as family and relatives or peers.

    11. *Students*—Individuals or groups of individuals who currently are enrolled in the program, institution, or system of postsecondary education.

    12. *Former Students*—Individuals or groups of individuals who formerly were enrolled in the program, institution, or system of postsecondary education.

    13. *Family and Relatives of Students or Former Students*

    14. *Peers and Associates of Students or Former Students*

    15. *Faculty*

    16. *Staff Other than Faculty*

    17. *Other Individual/Group Clients*—An example would be an individual who is none of the above but is served by an advisory service offered by the college.

20. *Interest-Based Communities*—This category refers to large groups that are identified as entities working toward a *well-defined interest or mission*.

    21. *Private Enterprise Communities*—Communities where a major purpose is financial remuneration and profit—for example, corporations, small businesses, and farmers.

    22. *Association Communities*—Communities where members belong on the basis of affiliation rather than employment, such as unions and professional societies.

    23. *Government Communities*—Communities designed to administer government regulations and services, such as city hall, state department of education, and legislative communities.

    24. *Nongovernmental/Public Service Communities Other than the Institution Producing the Outcome*—Nonprofit service organizations, such as schools, hospitals, welfare agencies, philanthropic foundations, colleges (other than the college producing the outcome), and research organizations.

    25. *Institution or Institutional Unit Producing the Outcome*—The postsecondary education institution and/or units within that institution that are perceived as the producer/facilitator of the outcome(s) of concern.

    26. *Other Interest-Based Communities*—An example would be an ad hoc coalition task force of representatives from two or more of the above areas.

30. *Geographic-Based Communities*—This category refers to large groups defined on the basis of *functional territorial boundaries*.

    31. *Local Community*—A township, city, county, metropolitan area or other type of locality having particular boundaries. It is not necessarily restricted to the legal or jurisdictional boundary, but the functional one in which the impact of the institution is (or should be) directly and physically felt. The boundaries will vary with the institution/program and outcome of concern.

    32. *The State*

    33. *A Region*—An aggregation of states or parts of states.

    34. *The Nation*

    35. *An International Community*

    36. *Other Geographic-Based Communities*—An example would be a research discovery that affects primarily people living in the coldest latitudes, or where it snows heavily.

40. *Aggregates of People*—This category refers to subpopulations of people *distinguished by particular characteristics that may indicate common concerns, needs or wants*, but who do not necessarily have a common interest or mission, and therefore do not constitute communities.

    41. *Ability Level Subpopulations*—Subpopulations defined according to level of ability/proficiency on general intellectual functioning or specific skills—for example, gifted, typical, disadvantaged, or skilled, semi-skilled, unskilled.

    42. *Age Subpopulations*

    43. *Educational Level Subpopulations*

    44. *Income Level Subpopulations*

    45. *Occupation Subpopulations*

    46. *Physical Disability Condition Subpopulations*

    47. *Race Subpopulations*

    48. *Sex Subpopulations*

    49. *Other Such Aggregates*

50. *Other Audiences*—Examples would be the natural environment that is affected by university-sponsored research (which in turn would be expected to have impacts on audiences such as individuals and communities) and populations of animals (such as the animals affected by efforts to keep depleted species from becoming extinct or by the development of veterinary medicine).

---

[a]From the "audience" dimension of the ICHEMS Outcomes Structure (Lenning et al, 1977, p. 24).

that the clients expect, and judges' perceptions of program value forming the horizontal axis. The matrix, which is shown in Figure 3, is vertically split into a description section and a judgment section.

---

Figure 3 goes about here

---

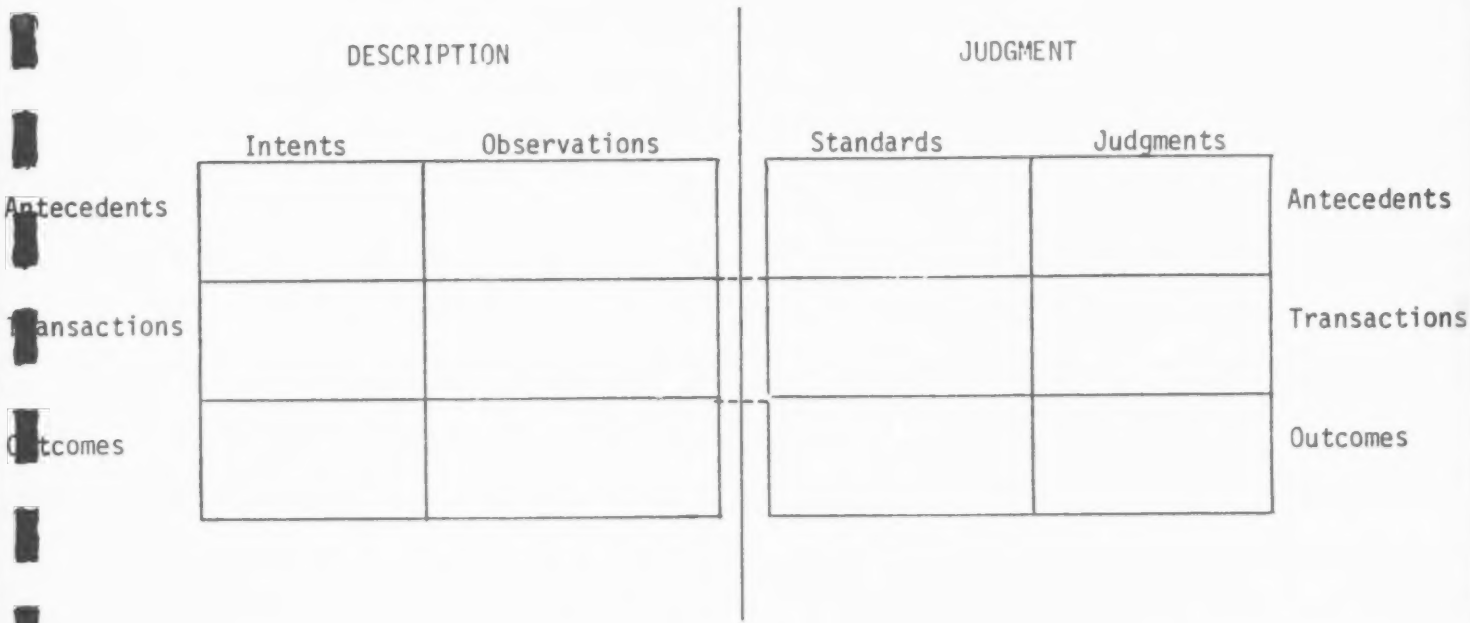
Concerning the description section of the matrix, intents includes program effects that are planned for or intended, desired, hoped for, anticipated, and those that are feared. A major problem for the evaluator is to deduce the intentions for the program and transform them into concrete, useable data. Observations include descriptions of surroundings, events, behaviors, and consequences that are gathered through direct observation and with the help of instruments such as "inventory schedules, biographical data sheets, interview routines, check lists, opinionnaires, and all kinds of psychometric tests."

During the analysis phase, the focus is on discovering for each row of the matrix how much of what was intended actually happened (discrepancies between intents and observed occurrance, and the amount of congruence), and also on examining the relationships (or contingencies) among antecedents, transactions, and outcomes across both the intended and observed dimensions. In addition to the congruence and contingency comparisons of descriptive data that have already been discussed, Stake stresses the importance of examining whether the program plan (intents) logically relates or conforms to the philosophic background and basic purposes of the program; whether the intents constitute a plausible and well-thought out plan for implementing the program rationale (philosophy and purposes).

Concerning the judgment section of the matrix, Stake indicated that a wholistic view is imperative but not being taken in most current evaluation efforts within education. As he stated it, "it is a great misfortune that the best trained evaluators have been looking at education with a microscope rather than with a panoramic view finder."

Figure 3

CATEGORIES OF DATA NEEDED FOR COMPREHENSIVE
PROGRAM EVALUATION ACCORDING TO STAKE'S COUNTENANCE MODEL



The descriptive data about the program, discussed earlier, can be judged with respect to sets of absolute standards or criteria of what the antecedent, transactional, and outcome intensions and observations should be (absolute comparison), each set conforming to the view of a relevant reference group or point of view. The other possibility is to judge the data with respect to the same data for similar programs elsewhere (relative comparison). In doing the judging, the evaluator assigns a weight of importance to each set of standards he/she considers to have relevance, and determines the program data on which to make comparisons. Based on relative and absolute judgment, the evaluator arrives at "an overall or composite rating of merit" and specifies limitations and qualifications that apply to this rating. He/she then develops recommendations regarding the program decisions of concern (continue the program as is, terminate the program, modify the program in particular ways).

Stake (1967) made it clear that all of what he proposed does not have to be done in one massive effort. Furthermore, because of available evaluation resources, many evaluation efforts will devote all of their resources to only certain areas of programs and to particular types of data (for example, intended versus actual outcomes). And Stake makes it clear that the process for narrowing down the focus should be deliberate and formal also, as indicated below:

> Educators should be making their own evaluations more deliberate, more formal. Those who will--whether in their classrooms or on national panels--can hope to clarify their responsibility by answering each of the following questions: (1) Is this evaluation to be primarily descriptive, primarily judgmental, or both descriptive and judgmental? (2) Is this evaluation to emphasize the antecedent conditions, the transactions, or the outcomes alone, or a combination of these, or their functional contingencies? (3) Is this evaluation to

indicate the congruence between what is intended and what occurs? (4) Is this evaluation to be undertaken within a single program or as a comparison between two or more curricular programs? (5) Is this evaluation intended more to further the development of curricula or to help choose among available curricula? With these questions answered, the restrictive effects of incomplete guidelines and inappropriate countenances are more easily avoided. (p. 540)

Stake's Responsive Evaluation

In later years, Stake changed his position about the relative value of formal and informal evaluation (1973). Whereas, he previously downgraded informal evaluation, he now favors it in the majority of cases because it is performing more of a service. Thus, he titles his new model "responsive evaluation." Responsive evaluation sacrifices some measurement precision, but gains in the value of the findings to those involved with the program. According to Stake:

> Responsive evaluation is less reliant on formal communication, more reliant on natural communication. . . It is evaluation based on what people do naturally to evaluate things: they observe and react. . . Subjectivity can be reduced by replication and operational definition of ambiguous terms even while we are relying heavily on the insights of personal observation. An educational evaluation is responsive evaluation (1) if it orients more directly to program activities than to program intents, (2) if it responds to audience requirements for information, and (3) if the different value-

> perspectives of the people at hand are referred to in reporting the success and failure of the program. . . . To do a responsive evaluation, the evaluator of course does many things. He makes a plan of observations and negotiations. He arranges for various persons to observe the program. With their help he prepares brief narratives, portrayals, product displays, graphs, etc. He finds out what is of value to his audiences. He gathers expressions of worth from various individuals whose points of view differ. Of course, he checks the quality of his records. He gets program personnel to react to the accuracy of his portrayals. He gets authority figures to react to the importance of various findings. He gets audience members to react to the relevance of his findings. He does much of this informally, iterating, and keeping a record of action and reaction. He chooses media accessible to his audiences to increase the liklihood and fidelity of communication. He might prepare a final written report; he might not--depending on what he and his clients have agreed on. ( )

Responsive evaluation allows the evaluator to respond to both current and emerging issues, and to adjust easily to changing conditions. A major focus is on observing the program in action.

Responsive evaluation is preferred in formative evaluation when monitoring is desired and no particular problems are projected. It is preferred for summative evaluation when what is desired is an understanding of the program's activities, strengths, and shortcomings. Preordinate evaluation (discussed previously) is preferred when the purpose is to see if goals have been reached or promises kept, and to test hypotheses and issues that were predetermined.

Figure 4

A TWO-DIMENSIONAL MATRIX THAT RELATES
STUFFLEBEAM'S FOUR TYPES OF DECISIONS AND ASSOCIATED EVALUATION TYPES[a]

| FOCUSES ON | End Results | Means of Obtaining Results |
|---|---|---|
| | Planning Decisions--Decisions about the setting to be served, the program ends or outcomes intended, and whether or not program mission, goals, and objectives should be changed. | Structuring Decisions--Decisions about sources of support and the means to be used to achieve the desired outcomes, including decisions about methods, content, organization, personnel, schedule, facilities, and budget. |
| Intentions | Context Evaluation--Developing a rationale for determination of program objectives, identification of potential methodological strategies, and development of proposals for outside funding through identification and analysis of: (1) needs and opportunities; (2) problems and constraints related to those needs and opportunities; (3) discrepancies between actual and intended inputs and outputs; (4) baseline information regarding actual, probable, and possible program operations and accomplishments; (5) internal and external environment philosophies, values, attitudes, goals, priorities, politics, economics, demographics, traditions, practices, etc.; (6) technological advances in the field; and (7) strategies, operations, and results obtained in similar programs elsewhere. | Input Evaluation--Determining if outside assistance is required to meet the program objectives, how the objectives should be selected operationally, the overall program strategy to employ, and the best use of available resources to meet program goals effectively and efficiently through identification and analysis of: (1) availability of human and material resources and capabilities for the program; (2) sources of possible additional resources, likelihood of obtaining such support, and the probable kinds and amounts of support; (3) relevance, effectiveness, feasibility, and economy of alternative solution strategies and procedural designs that are available to the program; and (4) numbers and characteristics of entities--such as students or other client groups--that are intended to be served, acted on, and/or modified by the program. |
| | Recycling Decisions--Decisions to continue, terminate, refine, revise, or refocus the program; based on the attainments achieved. | Implementing Decisions--Operational decisions pertaining to utilization, control, modification, and refinement of the program procedures and design. |
| Actualities | Process Evaluation--Identifying and predicting (based on program operation) defects in procedural design or its implementation, servicing the operational decisions built into the program design, and determining the extent to which program procedures are operating as intended, through: (1) continuously monitoring and identifying staff and student interactions, communication channels, logistics, adequacy of program resources, amount of consensus among program staff and participants about the purposes of the program, sources of problems, unanticipated bottlenecks and other problems, etc.; (2) providing the information needed to make the operational decisions specified by the program plan; and (3) recording program process events and activities as they occur, and relating them to what was projected in the program design, for indications of why the program objectives are or are not being met. | Product Evaluation--Measuring and intepreting program process and outcome attainments during and at the end of each program cycle, through: (1) defining program objectives in concrete, observable, and operational terms; (2) identifying or developing indicators and measures, and associated interpretational criteria; (3) collecting data for the indicators and measures specified; (4) comparing the measurement and indicator data to either absolute or comparative standards selected as the criteria to be met; (5) interpreting the outcome results obtained, through relating them to the context, input, and process information gathered in the other three types of evaluation; and (6) making judgments about program worth and/or how program outcomes can be improved through program modification. |

[a]Abstracted from Stufflebeam et al (1971), page 79-84 and 218-235.

Stufflebeam's Model

Stufflebeam and his associates (1971) introduced a new definition and focus for evaluation: "Evaluation is the process of delineating, obtaining and providing useful information for judging decision alternatives." In addition, they set forth four separate types of evaluation, each of which primarily influences one of four major types of decisions as shown below:

| Evaluation Type | | Decision Type |
|---|---|---|
| Context Evaluation | → | Planning Decisions |
| Input Evaluation | → | Structuring Decisions |
| Process Evaluation | → | Implementing Decisions |
| Product Evaluation | → | Recycling Decisions |

What each type of evaluation and each type of decision involves is described in Figure 4. In this model, continual feedback is being provided to the decision-maker, which may cause him/her to reconsider earlier decisions.

---

Figure 4 goes about here

---

An additional word should be said about the context in which the program is operating and being administered--highlighted as a part of Figure 3. That context also can markedly affect the evaluation itself in ways that the evaluator must consider. For example, as discussed by Smith (1977), the politics and values that dominate the internal and external environments should be expected to have profound impacts on the evaluation process.

According to Stufflebeam, the structure of tasks in the evaluation design is the same for all four types of evaluation. He presented those tasks as follows:

## TASKS

A. Focusing the Evaluation

1. Identify the major level(s) of decision-making to be served, e.g., local, state, or national.

2. For each level of decision-making, project the decision situations to be served and describe each one in terms of its locus, focus, criticality, timing, and composition of alternatives.

3. Define criteria for each decision situation by specifying variables for measurement and standards for use in the judgment of alternatives.

4. Define policies within which the evaluator must operate.

B. Collection of Information

1. Specify the source of the information to be collected.

2. Specify the instruments and methods for collecting the needed information.

3. Specify the sampling procedure to be employed.

4. Specify the conditions and schedule for information collection.

C. Organization of Information

1. Provide a format for the information which is to be collected.

2. Designate a means for performing the analysis.

D. Analysis of Information

1. Select the analytical procedures to be employed.

2. Designate a means for performing the analysis.

E. Reporting of Information

1. Define the audiences for the evaluation reports.

2. Specify means for providing information to the audiences.

3. Specify the format for evaluation reports and/or reporting sessions.

4. Schedule the reporting of information.

F. Administration of the Evaluation

1. Summarize the evaluation schedule.

2. Define staff and resource requirements and plans for meeting these requirements.

3. Specify means for meeting policy requirements for conduct of the evaluation.

4. Evaluate the potential of the evaluation design for providing information which is valid, reliable, credible, timely, and pervasive.

5. Specify and schedule means for periodic updating of the evaluation design.

6. Provide a budget for the total evaluation program.

Stufflebeam and his associates (1971, pp. 27-30) discussed eleven criteria that evaluation should meet. These criteria, and what they imply are as follows: (1) internal validity--close correspondence between the evaluative information and the phenomena it represents, (2) external validity--generalizability of the information, (3) reliability--consistency and replicability of the information, (4) objectivity--publicness of the infomation, (5) relevance--purposes of the evaluation that are served, (6) importance--high priority information highlighted, (7) scope--comprehensiveness, (8) credibility--amount of trust and integrity in the evaluation and evaluator perceived by pertinent others, (9) timeliness--information provided when needed, (10) pervasiveness--evaluative findings disseminated to all persons who need it, and (11) efficiency--evaluative time, cost, and personnel.

Alkin's Approach

Alkins' (1969) Model is very similar to Stufflebeam's in purpose and operation, but involves five types of evaluation and five types of decisions. (He separates Stufflebeam's process evaluation into "program implementation" and "program improvement.") Each of the five types of evaluation is described below, and they occur in this order:

1. Systems Assessment - status of the system on discrepancy needs and goals.
2. Program Planning - matching of programs to needs.
3. Program Implementation - extent to which the program has been introduced as intended to the group intended.

4. Program Improvement - information about program functioning, achievement of objectives, and unintended outcomes which can guide program modification.
5. Program Certification - worth and generalizability of the program to related situations.

Hammond's Model

Hammond (1973) has suggested an approach to evaluation of innovations, and makes use of a cube that represents an interaction of three dimensions which can be used to structure the evaluation. The "instructional dimension," as represented on one face of the cube, is divided into the following categories and subcategories for an elementary school:

A. Time (duration and sequence of blocks of time devoted to the clientele.
B. Space (the vertical and horizontal organization of the clientele.
    1. Vertical and Horizontal Organization
    2. Content
    3. Methodology
    4. Facilities
    5. Cost

A second face of the cube represents the "institutional dimension," which is split into the following categories for the elementary school: student, teacher, administrator, educational specialist, family, and community. Each of these groups that is involved in the process, is subdivided according to various descriptive variables. For example, Hammond subdivided "students" according to age, grade level, sex, familial variables, socioeconomic variables, physical health, mental health, achievement, ability, interest, and relationship to innovation.

"Behavioral dimension" is the final dimension proposed by Hammond. This dimension is broken into the Bloom taxonomy categories of cognitive, affective, and psychomotor. They were hoping to add a fourth category that they tentatively labeled "perceptual behavior."

Hammond says the following about his structure that is graphically represented by a cube:

> The structure developed provides a framework to produce factors that have a direct influence on a given innovation. The factors created by the interaction of one variable from each of the dimensions may be studied in any depth desired...In most cases, the study of a given factor will be determined by time, availability of tests and procedures, and the needs....Once the forces affecting a given innovation have been identified and placed in a structure which permits an analysis of the interaction of these forces, the next step is that of placing the structure in a working model for evaluation....Sound evaluation procedures require that the process begin with the current programs. Before attempts at innovation are made, adequate baseline data is required to make those decisions which determine the direction of the change process. (p. 167)

Because of limited evaluation skills of personnel, Hammond proposes that the process at the beginning evaluate only one area of the insitution or program. With such a precaution, and effective training, he contends that local staff can conduct all aspects of the evaluation throughout the institution.

Hammond's model involves six procedural steps that have been quoted and paraphrased as follows:

1. Select an area(s) within the total program on which the evaluation should focus.
2. For the area selected, define descriptive variables for the instructional and institutional dimensions.
3. State the objectives in behavioral terms, in terms of the behavior that will be accepted as evidence the client has achieved the objective, the conditions under which the behavior will be expected to occur, and the level of performance that is acceptable. Scriven (1971) made a statement that adds a relevant point here: "There are

non-behavioral objectives, but we have to translate them into behavioral objectives if we want to know whether we have achieved them.

4. Assess the behavior described in the objectives.
5. Analyze the results within factors and the relationships between factors, to arrive at conclusions based on actual behavior.
6. Disseminate the conclusions and apply them to guiding the development of innovations in the program.

Hammond's model utilizes the behavioral objective and feedback concepts developed in the 1930's by Ralph Tyler (1942), considered by many to be the "father of educational evaluation." But it goes far beyond that to the application of a multi-dimensional structure showing factor interactions that can remind staff of important program factors that might be overlooked if the structure were not used. Of course Hammond's structure will need to be modified appropriately in order to be applied to the evaluation of student affairs programs, but the concepts, principles, and general procedures he outlines are pertinent in that setting.

Provus' Discrepancy Evaluation

"Discrepancy evaluation" is a term made popular by Provus (1971) in his model for evaluating ongoing educational programs. (The purpose he espoused for evaluation was to determine whether the program should be improved, maintained, or terminated.) His model involves three general procedures, plus five program development stages which have questions associated with each that need to be answered. The three general procedures are as follows: (1) agree upon and define program standards and objectives; (2) identify any discrepancies between observations made about particular aspects of the program and what should be the case according to the program standards and objectives; and (3) use the discrepancy information to identify program weaknesses and feed it back to the program developers to guide program modification and problem solving. As a basis for

his model, Provus also focused on teamwork between the program developers and evaluators and the necessity for continuous communication between the evaluator and the program staff.

The discrepancy evaluation concept can usefully be carried beyond the definition of discrepancy favored by Provus. For example, the current author is a strong proponent of profile analysis, where the patterns of similarities discrepancies among program factors within and across program dimensions are studied to identify not only weaknesses but strengths around which improvement can be built. Perhaps such discrepancy evaluation should be referred to as profile or pattern evaluation in order to distinguish it from the concept and model popularized by Provus.

Other Evaluation Models

Additional models have been proposed, with some specific concepts or ideas that deserve attention and consideration. Worthen and Sanders (1973), for example, discuss the personal judgment or accreditation model that makes use of self-study, visitations, annual reports, and panels of expert judges. Although most institutions perhaps do not really try to use accreditation study data for program improvement, the accreditation bodies are proponents of such application of the data, and their rationale makes sense to this author.

Wolf (1975) applied the concept of a jury trial to educational evaluation. In such a proceeding, evidence is presented by advocates on either side to an impartial jury, which makes a judgment about the worth of the program. As in a jury trial, a "judge" is present to insure consistency and fairness in the proceedings. Wolf contends that his "judicial model" (or the "adversary model" as it is more commonly referred to) "demands that the evaluation focus on relevant

and significant issues as determined by a broad variety of persons involved in or effected by the program (1975, page 186)." The adversary model has subsequently received mixed reviews (Arnstein, 1975; Popham and Carlson, 1977; Jackson, 1977; Thurston, 1978).

Student affairs programs, as is true of other types of programs, consist of complex arrays of human players and a multitude of factors all interacting in an on-going and dynamic process. Evaluating such interactions is an especially difficult task, and "transactional models" have especially focused on such dynamics (Rippy, 1973). Informal analyses, such as the case study, are the primary method of such models. Stake's responsive evaluation (discussed earlier) is, in effect, a transactional model.

Another model to be mentioned is a paradigm involving multiple criterion measures for evaluating effectiveness that was synthesized by Metfessel and Michael (1967). They divided the evaluation process into eight phases or steps, and emphasized that judgmental decisions are involved in every phase:

(1) Involve both directly and indirectly members of the total institutional community as participants in, and facilitators of, the program evaluation. This could also involve outside people such as parents and the community.

(2) Formation of a cohesive paradigm of broad goals and specific objectives arranged in a hierarchical order from general to specific outcomes.

(3) Translation of specific objectives into a communicable form applicable to facilitating learning in the institutional environment.

(4) Gather or develop the instrumentation necessary for furnishing criterion measures from which inferences can be formulated concerning program effectiveness in terms of the objectives set forth.

(5) Carry out periodic observations through the use of tests, scales, and other indices of behavioral change that are considered valid with respect to the objectives sampled.

(6) Analyze the data furnished by the status and change measures through use of appropriate statistical methods.

(7) Interpretation of the data relative to specific standards, objectives and broad goals.

(8) Formulate recommendations for further implementation, modification, or revision of the program or its goals and objectives.

As the various evaluation strategies have been discussed, this writer's personal views have crept in, for example, concerning the desirability of being on the lookout also for evidence of unintended outcomes during the evaluation process, and the importance of periodically conducting an evaluation of one's program goals. One strategy strongly held by the author was not really emphasized by any of the theorists, however--regarding the desirability of a wholistic phase followed by a focused phase. The wholistic phase is diverse and "broad-band" in its focus and examines many different factors at one time. Focused and more in-depth or detailed "narrow-band" follow-up of obvious problem areas is then called for as a part of the overall process.

Categorizations of Model Types

To review and summarize the various models that have been outlined, two classifications of evaluation model types that were found in the literature will now be discussed. Popham (1975) came to the conclusion that there were four general classes of educational evaluation models, as follows:

1. Goal-attainment models--The Tyler, Hammonds, and Metfessel and Michael models fall into this category.
2. Judgmental models emphasizing intrinsic criteria--The accreditation model and Stake's responsive models fall into this category.
3. Judgmental models emphasizing extrinsic criteria--The Scriven formulation, the adversary model, and Stake's countenance (or preordinate) model fall into this category.

4. Decision-facilitation models--The Stufflebeam, Alkin, and discrepancy evaluation models fall in this category.

In a more recent attempt to categorize evaluation models, House (1978) differentiated eight categories: systems analysis, behavioral objectives, decision-making, goal free, art criticism, accreditation, adversary, and transaction. He differentiated them on the basis of their proponents, their major audiences, what they assume consensus on, the methodology used, the outcome or purpose, and the typical questions asked. For example, the typical questions associated with each type are as follows (House, 1978, p. 12):

- Systems Analyses---------Are the expected effects achieved?
  Can the effects be achieved more economically?
  What are the most efficient programs?
- Behavioral Objectives----Are the students achieving the objectives?
  Is the staff producing?
- Decision Making----------Is the program effective?
  What parts are effective?
- Goal Free----------What are all the effects?
- Art Criticism----------Would a critic approve this program?
- Accreditation----------How would professionals rate this program?
- Adversary----------What are the arguments for and against the program?
- Transaction----------What does the program look like to different people?

Based on his study of the various models, House reported that "the major elements in understanding the models are their ethics, their epistemologies, and their political ramifications." All of the models were found to derive from the philosophy of liberalism, which "grew out of an attempt to rationalize and justify a market society," and which focuses on choice, individualism, and empiracism. Similarly all of the major models were found to be subjective in ethics. Then the models break out as shown in Figure 5.

---

Figure 5 goes about here

---

HOUSE'S (1978) BROAD AND NARROW CATEGORATIONS OF EVALUATION MODELS

<table>
<tr><td colspan="7">Subjectivist Ethics<br>Emphasis</td></tr>
<tr><td colspan="4">Intuitionist/pluralist<br>(Subjectivist epistemology<br>[tacit knowledge])<br>Emphasis</td><td colspan="3">Utilitarian<br>(Objectivist epistemology<br>[explicit knowledge])<br>Emphasis</td></tr>
<tr><td colspan="2">Participatory<br>(mass)<br>or<br>Transactional<br>Knowing<br>Emphasis</td><td colspan="2">Professional<br>(elite)<br>or<br>Expertise<br>Through<br>Experience<br>Emphasis</td><td>Consumers<br>(mass)<br>or<br>Qualitative<br>Objectivity<br>Emphasis</td><td colspan="2">Managerial<br>(elite)<br>or<br>Quantitative<br>Objectivity<br>Emphasis</td></tr>
<tr><td>Transaction Models</td><td>Adversary Models</td><td>Accreditation Models</td><td>Art Criticism Models</td><td>Goal.-Free Models</td><td>Decision-Making Models</td><td>Behavioral Objectives Models</td><td>Systems Analysis Models</td></tr>
</table>

## Conclusion: Staff Skills and Competencies Needed for Student Affairs Program Assessment and Evaluation

The preceding discussion of strategies and procedures for conducting assessment and evaluation has implied a number of skills and competencies that student affairs assessors and evaluators should have in order to be effective, with the requirements varying according to the model(s) endorsed. Some skills are important for all approaches, however, such as the ability to ask the important questions, to think logically, and to communicate effectively.

Two literary works were found that focused exclusively on evaluation skills. Scriven (1971) focused on the skills needed by a professional program evaluator, and made the following statement:

> Evaluation requires almost all of the skills known to man in order to be done well; although it is also true that we will do it in our amateur kind of way, sometimes quite successfully, whenever we buy a new washing machine or decide on a new automobile. It's worth remembering that those tasks which we all do as individuals are done with extreme care and quite demonstrably better by semi-technical skilled personnel, ranging from Tom McCahil down to the staff of consumer reports.

In his discussion, Scriven emphasized a number of specific skills for becoming competent in evaluation. One concerned the ability to conceptualize, another concerned the ability to work together with others as a team. Scriven also concluded that some evaluation problems, but not a majority, require considerable sophistication in statistics. Other skills and competencies mentioned included the ability to do moral and political analysis; an understanding of game theory; ability to formulate goals in a way that makes it possible to determine later if they were achieved; ability to form behavioral

objectives, plus to clarify and communicate about them; ability to link what is observed in field tests to language; general knowledge about the program being evaluated and the practices relevant to that field; the ability to formulate alternative hypotheses; the ability to identify concretely and specifically what one is evaluating; and the ability to evaluate options and to make balanced, practical judgments about their desirability and feasibility. Scriven claimed that all of these skills are important, but that the most crucial one is the one listed last above.

Owens and Evans (1977) focused on the program evaluation skills needed by busy administrators, who are probably more representative of the typical student affairs worker than is a professional evaluator. Interestingly, the skills Owens and Evans emphasize are similar in nature to the ones emphasized by Scriven, and they cover a broader array of skills:

- The ability to identify the purposes and audiences for one's evaluation;
- The ability to prepare a basic description of the program, and its activities, to be evaluated;
- The ability to refine educational objectives in terms of who will do the action, what the activity is, the criteria for judging successful objective attainment, and the conditions under which the activity will be conducted;
- The ability to write worthwhile (clear, emphasizes important skills and processes, and provides a challenge at the same time it is achievable) objectives, and to determine which objectives are most critical to evaluate;
- The ability to describe the resources and processes to be used in achieving one's objective;
- The ability to specify the alternative decisions likely to be made about a program;
- The ability to state evaluation questions clearly and concretely;
- The ability to establish evaluation guidelines consistent with funding availability, local concerns, administrative policy, and ethical principles;

- The ability to identify available resources for conducting the evaluation;
- The ability to specify pertinent data sources;
- The ability to determine appropriate ways to measure selected processes and outcomes;
- The ability to select and apply instruments in terms of reliability, validity, and usefulness;
- The ability to establish and apply criteria for the selection of an evaluation specialist;
- The ability to prepare a basic evaluation plan for collecting, analyzing, and reporting data and transforming it into information;
- The ability to make judgments regarding various types and formats for evaluation reporting; and
- The ability to apply various types of evaluation findings.

All of the above skills and competencies are important for the assessment and evaluation of student affairs programs. However, the amount of emphasis on each depends on the assessment and evaluation model one chooses to guide such efforts, or the combinations of strategies and procedures from various models that are integrated into one's personal framework. For example, Stake's responsive evaluation depends little on the formal measurement of outcomes and on statistics, and the component skills needed to conduct such activities; and emphasizes such skills as interpersonal relations, negotiation, natural observation and communication, and the ability to portray and narrate. Conversely, his preordinate evaluation emphasizes such things as developing formal objectives; transforming those objectives into concrete, systematic data requirements; selecting formal instruments and using them plus formal observation procedures to gather the needed data; and using analyses of various kinds (including sophisticated statistical techniques where appropriate) to compare actuality to intentions on antecedent, transaction, and outcome variables.

Concerning statistical analyses, Stake would not expect the evaluator to be a statistician but to know enough about statistics to be able to intelligently choose and communicate with a statistics expert when needed for the project, and to appropriately interpret and apply any statistical data that are gathered.

Which assessment and evaluation approaches one chooses will depend on many factors, including the philosophy and skills of the evaluator. It is quite appropriate to use components from several different models to form one's own eclectic model, as long as it is well thought out and logically sensible in relation to the evaluator, the program, and the context within which the evaluator and the program must operate. Furthermore, the same evaluator may often need different approaches for different programs and contexts.

A final point should be emphasized. The comprehensiveness of assessment and evaluation that is implied in this chapter is an ideal that will often involve more than the time, the financial resources, and the political restraints present, will allow. Furthermore, it is crucial for the reader to understand that the total evaluation for a program should not be attempted all at once, and that feasibility (with respect to fiscal resources, time, staff expertise, the political environment, etc.) must be a primary consideration in designing the evaluation plan--along with the needs of the program, the purposes the evaluation is to serve, what methods and activities will be effective, and so forth. An ongoing program evaluation plan should be cyclical, with differential phases totaling several years before the cycle is repeated. During the year that a particular segment of the program is being focused on in-depth, simple monitoring techniques such as those discussed by Hecht (1977) should be used to keep ones "finger on the pulse and gross health" of the other areas of program functioning. If assessment and evaluation activities are well-planned and spaced appropriately, such activities can contribute greatly to program

improvement, support, and accountability. If not, staff members, evaluators, and outside observers are likely to become disillusioned, distrustful, and/or sarcastic concerning the evaluation effort--and possibly also with respect to the operational program. No evaluation would probably be better than ineffective and misleading evaluation.

REFERENCES


Alderfer, C.P., and Holbrook, J. A New Design for Survey Feedback. 1973. ED 078 598.

Alkin, M.C. "Evaluation Theory Development." Evaluation Comment, October 1969, 2(1), 2-7.

Anderson, S.B., Ball, S., Murphy, R.T., and associates. Encyclopedia of Educational Evaluation. San Francisco: Jossey-Bass, 1976.

Arnstein, G.E. "The Outcome." Phi Delta Kappan. 1975, 57, 188-190.

Baird, L.L. "The Practical Utility of Measures of College Environments." Review of Educational Research, 1974, 44, 307-330.

Baird, L.L. "Structuring the Environment to Improve Outcomes." In O.T. Lenning (Ed.), Improving Educational Outcomes: New Directions for Higher Education. San Francisco: Jossey-Bass, 1976. Pp. 1-22.

Bloom, B.S. (Ed.) Taxonomy of Educational Objectives; Handbook 1: Cognitive Domain. New York: David McKay, 1956.

Boyd, H.W., and Westphall, R. Marketing Research. 3rd ed. Homewood, Ill.: Richard D. Irwin, Inc., 1972.

Burck, H.D., and Peterson, G.W. "Needed: More Evlauation, Not Research." Personnel and Guidance Journal, 1975, 53, 563-569.

Buros, O.K. The Seventh Mental Measurements Yearbook. 2 Vols. Highland Park, N.J.: Gryphon Press, 1972.

Campbell, D.T., and Stanley, J.C. Experimental and Quasi-Experimental Designs for Research on Teaching. In N.L. Gage (Ed.) Handbook of Research on Teaching. Chicago: Rand-McNally, 1963.

Clark, M.J., Hartnett, R.T., and Baird, L.L. Assessing Dimensions of Quality in Doctoral Education: A Technical Report of a National Study in Three Fields. Princeton, N.J.: Educational Testing Service, 1976.

Conrad, C. "University Goals: An Operative Approach." Journal of Higher Education, 1974, 45, 505-515.

Doi, J.I. (Ed.) Assessing Faculty Effort: New Directions for Institutional Research. San Francisco: Jossey-Bass, 1974.

Dressel, P.L. Handbook of Academic Evaluation. San Francisco: Jossey-Bass, 1976.

Granlund, N.E. Preparing Criterion-Referenced Tests for Classroom Instruction. New York: Macmillan, 1973.

Hammond, R.L. "Evaluation at the Local Level." Address to the Miller Committee for the National Study of ESEA Title III, 1967. In B.R. Worthen and J.R. Sanders, Educational Evaluation: Theory and Practice. Worthington, Ohio: Charles A. Jones Publishing Company, 1973. Pp. 157-169.

Harrocks, J.E. Assessment of Behavior. Columbus, Ohio: Merrill, 1964.

Hecht, A.R. "A Summary of the Moraine Valley Community College Evaluation System." Unpublished paper. Palos Hills, Ill.: Moraine Valley Community College, 1977.

House, E.R. "Assumptions Underlying Evaluation Models." Educational Researcher, 1978, 7(3), 4-12.

Jackson, G. "Adversary Evaluation: Sentenced to Death Without a Fair Trial." Educational Researcher, 1977, 6(10), 2.

Knapp, J. and Sharon, A. A Compendium of Assessment Techniques. Princeton, N.J.: Educational Testing Service, 1975.

Krumboltz, J.D. "An Accountability Model for Counselors." Personnel and Guidance Journal, 1974, 52, 639-646.

Lange, A., Lehmann, I.J., and Mehrens, W.A. "Using Item Analysis to Improve Tests." Journal of Educational Measurement, 1967, 4, 65-68.

Lasell, W.L. "Product Evaluation as a Way of Thinking." American Vocational Journal, 1974, 49, 25-26.

Lenning, O.T. "Assessing Student Progress in Academic Achievement." In L.L. Baird (Ed.), Assessing Student Academic and Social Progress: New Directions for Community Colleges. San Francisco: Jossey-Bass, 1977. (a)

Lenning, O.T. The Outcomes Structure: An Overview and Procedures for Applying It in Postsecondary Education Institutions. Boulder, Colo.: National Center for Higher Education Management Systems, 1977. (b)

Lenning, O.T. "Assessing Student Educational Progress." ERIC/Higher Education Research Currents, April 1978. In AAHE College and University Bulletin, 1978, 30(7), 3-6. (a)

Lenning, O.T. "A Conceptual Framework for Identifying and Assessing Needs in Postsecondary Education." Paper presented at the annual Forum of the Association for Institutional Research, Houston, May, 1978. (b)

Lenning, O.T., Lee, Y.W., Micek, S.S., and Service, A.L. A Structure for the Outcomes of Postsecondary Education. Boulder, Colo.: National Center for Higher Education Management Systems, 1977.

Lenning, O.T., and McAleenan, A.C. "Needs Assessment in Student Affairs." In G. Kuh (Ed.), Evaluation in Student Personnel Work. Washington, D.C.: American College Personnel Association, in press.

May, R.D. "Guidance Program Evaluation--The Counselors Role." Unpublished paper, November, 1975. ED 120 595.

Menges, R.J. Assessing Readiness for Professional Practice. Evanston, Ill.: Center for the Teaching Professions, Northwestern University, 1978.

Metfessel, N.S., and Michael, W.B. "A Paradigm Involving Multiple Criterion Measures for the Evaluation of the Effectiveness of School Programs." Educational and Psychological Measurement, 1967, 27, 931-943.

Micek, S.S., Service, A.L., and Lee, Y.S. Outcome Measures and Procedures Manual. Field Review Edition. Boulder, Colo.: National Center for Education Management Systems, 1975.

Miller, T.K. and Prince, J.S. The Future of Student Affairs. San Francisco: Jossey-Bass, 1976.

Murphy, R.T. "Assessment." In S.B. Anderson, S. Ball, R.T. Murphy and associates, Encyclopedia of Educational Evaluation. San Francisco: Jossey-Bass, 1976, Pp. 26-29.

National Study of Secondary School Evaluation. Evaluative Criteria, 1960 Edition. Washington, D.C.: National Study of Secondary School Evaluation, 1960.

Owens, T.R. Program Evaluation Skills for Busy Administrators. Portland, Oregon: Northwest Regional Educational Laboratory, 1977.

Palola, E.G., and Lehmann, T. "Student Outcomes and Institutional Decision Making with PERC." In O.T. Lenning (Ed.), Improving Educational Outcomes: New Directions for Higher Education. San Francisco: Jossey-Bass, 1976.

Payne, D.A. The Assessment of Learning: Cognitive and Affective. Lexington, Mass.: Heath, 1974.

Popham, J.W. Educational Evaluation. Englewood Cliffs, N.J.: Prentice-Hall, 1975.

Popham, J.W., and Carlson, D. "Deep Dark Deficits of the Adversary Evaluation Model." Educational Researcher, 1977, 6, 3-6.

Pottinger, P., and Klemp, G. Final Report to the Fund for the Improvement of Postsecondary Education. Boston: McBer and Co., October 1975. ED 134 540.

Pottinger, P., and Klemp, G. Concepts and Issues Related to the Identification, Measurement, and Validation of Competence. Boston: McBer and Co., 1976. ED 134 539.

Provus, M. Discrepancy Evaluation for Educational Program Improvement and Assessment. Berkeley, Calif.: McCutchan, 1971.

Provus, M. "Evaluation of Ongoing Programs in the Public School System." National Society for the Study of Education 68th Yearbook, Part II, 1969, 242-283. Reprinted in B.R. Worthen and J.R. Sanders (Eds.), Educational Evaluation: Theory and Practice. Worthington, Ohio: Charles A. Jones Publishing Company, 1973. 170-207.

Rippy, R.M. Studies in Transactional Evaluation. Berkeley, Calif.: McCutchan, 1973.

Scriven, M. "The Methodology of Evaluation." In R. Tyler, R. Gagné, and M. Scriven (Eds.), Perspectives of Curriculum Evaluation. AERA Monograph Series on Curriculum Evaluation, No. 1. Chicago: Rand-McNally, 1967, Pp. 39-83.

Scriven, M. Evaluation Skills. Audio cassette tape. Washington, D.C.: American Educational Research Association, 1971.

Scriven, M. "Pros and Cons About Goal-Free Evaluation." Evaluation Comment, 1972, 3(4), 1-4.

Siegel, S. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill, 1956.

Smith, N.L. Sources of Values Influencing Educational Evaluation. Research Evaluation Development Report No. 7. Portland, Oregon: Northwest Regional Educational Laboratory, 1977.

Stake, R.E. "The Countenance of Educational Evaluation." Teachers College Record, 1967, 68, 523-540.

Stufflebeam, D.L., Foley, W.J., Gephart, W.J., Guba, E.G., Hammond, R.I., Merriman, H.O., and Provus, M.M. Educational Evaluation and Decision Making. Bloomington, Indiana: Phi Delta Kappa, 1971.

Stufflebeam, D.L. "Evaluation as Enlightenment for Decision-Making." In W.H. Beatty (Ed.), Improving Educational Assessment and an Inventory of Measures of Affective Behavior. Washington, D.C.: Association for Supervision and Curriculum Development, National Education Association, 1969. Excerpts reprinted in B.R. Worthen and J.R. Sanders (Eds.), Educational Evaluation: Theory and Practice. Worthington, Ohio: Charles A. Jones Publishing Company, 1973. Pp. 143-148.

Tatsuoka, M.N., and Tiedeman, D.V. "Statistics as an Aspect of Scientific Method and Research on Teaching." In N.L. Gage (Ed.), Handbook of Research on Teaching. Chicago: Rand-McNally, 1963. Pp. 142-170.

Thelin, J.R. "Beyond the Factory Model: New Strategies for Institutional Evaluation." College and University, 1976, 51, 161-164.

Thurston, P. "Revitalizing Adversary Evaluation: Deep Dark Deficits or Muddled Mistaken Musings." Educational Researcher, 1978, 7(7), 3-8.

Tyler, R.W. "General Statement on Evaluation." Journal of Educational Research, 1942, 35, 492-501.

Webb, E.J., Campbell, D.T., Schwartz, R.D., and Secrest, L. Unobtrusive Measures: Nonreactive Research in the Social Sciences. Chicago: Rand-McNally, 1966.

Wickline, L.E. "Educational Accountability." In E.W. Roberson (Ed.), Educational Accountability Through Evaluation, Englewood Cliffs, N.J: Educational Technology Publications, 1971.

Wolf, R.L. "Trial by Jury: A New Evaluation Method." Phi Delta Kappan, 1975, 57, 3, 185-187.

Worthen, B.R., and Sanders, J.R. Educational Evaluation: Theory and Practice. Worthing, Ohio: Charles A. Jones Publishing Company, 1973.